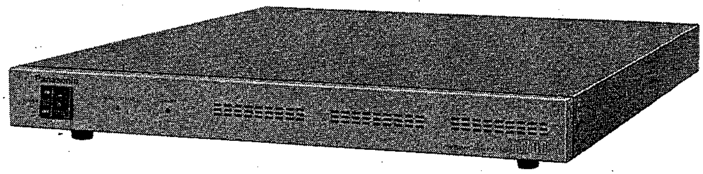
ORDER NO. VRD8907M620

Service Manual

Time Base Corrector
AG-TB700-A -E

Operating Instructions
Electrical Adjustment Procedures
Block Diagrams
Schematic Diagrams
Circuit Board Diagrams
Exploded Views
Replacement Parts List



SPECIFICATIONS

ITEM	SPECIFICATION
Power	Source: AC 100~240V, 50~60Hz
	Consumption: Approx. 65W
Television System	CCIR Standard (625 lines, 50 fields) PAL COLOUR signal
Processing System	Component
Correction Range	2 Fields
Operating Temperature	10°C~40°C
Operating Humidity	10%~90%
Weight	Approx. 9kg
Dimensions	430 (W) × 44 (H) × 450 (D) mm
Video	
Frequency Response (Y/C INPUT)	Y: 5MHz, −3dB C: 4.43MHz±0.5MHz−3dB
DG	2% (APL 10~90%)
DP	2° (APL 10~90%)
K factor (2T)	2% (Heterodyne mode)
H TILT	1%
V TILT	1%
Output Signal Jitter	Luminance: ±15nsec, Chrominance: ±2°
Signal-to-Noise Ratio	56dBp-p/rms (excluding quantization noise)
White/Black Clip	110/0 IRE

ITEM	SPECIFICATION
Quantization	Y: 8-bit C: 8-bit
Sampling Frequency	Y: 13.5MHz C: 6.75MHz (4: 2: 2 format)
Freeze	Selectable frame/field
Auto freeze	When input signal is interrupted
Strobo Freeze	The automatic intermittent freeze function can be set ON/OFF. The time interval can be also set from the card edge control.
No-signal Freeze	When no signal is input or a disturbance that affects H or V timing occurs (such as excessive noise) the picture is automatically frozen by field. (Internally selectable ON/OFF. Factory set is OFF.)
Vertical Blanking	Internal, selectable ON/OFF
Input Level (100% White, 100% Colour Bar)	Video: Composite (BNC): 1.0Vp-p, 75Ω Y/C 443 (7P), S-VIDEO (DIN, 4P): Y; 1.0Vp-p, 75Ω C; (Burst level) 0.3Vp-p, 75Ω REF IN (BNC×2): Black burst 0.45Vp-p High Impedance loop-through DOC (BNC): RF 0.2~1Vp-p, 75Ω
Output Level	Video: Composite (BNC×2): 1.0Vp-p, 75Ω Y/C 443 (7P), S-VIDEO (4P): Y; 1.0Vp-p, 75Ω C; (Burst level) 0.3Vp-p, 75Ω Component (BNC×3): Y; 1.0Vp-p, 75Ω P_R; 0.7Vp-p, 75Ω P_B; 0.7Vp-p, 75Ω ADV Sync (BNC): 4.0Vp-p, 75Ω
Remote connector	25P

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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INTRODUCTION

This Service Manual contains all the technical information which allows service personnels to understand and service the Panasonic Time Base Corrector Model AG-TB700-A/E.

OUT LINE

The AG-TB700 digital time-base corrector has been developed using the latest digital technology. It compensates for time-base errors and dropout in composite video signals and S output (Y/C 443) video signal played back from a CCIR television format heterodyne process VTR.
It has a freeze function which produces special effects, enabling you to use it for a wide range of applications including broadcasting, editing and dubbing.

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1. THIS APPARATUS MUST BE EARTHED.

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth.

Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of power points, consult a qualified electrician.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

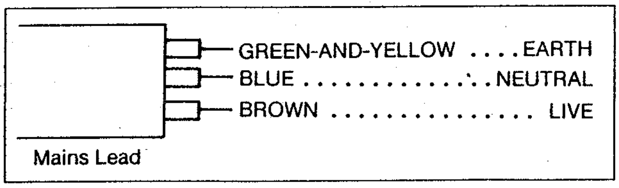
The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is maked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

2. AC POWER CORD CONNECTION (U.K. Model only)

The wires in the mains lead for this apparatus are coloured in accordance with the following code.


GREEN-AND-YELLOW .... EARTH
BLUE .... NEUTRAL
BROWN .... LIVE
Mains Lead

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION:
TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FEATURES

1. 8-bit quantization

The unit performs 8-bit quantization for Y and C independently.

2. Accepts S-VHS (Y/C443) inputs and outputs

The unit performs independent processing of Y and C, enabling it to be connected to a high image quality S-VHS.

3. Component Y, P_B and P_R outputs

The unit can be connected to MII equipment (with BNC specification Y, P_B and P_R connectors).

4. High resolution and high image quality

The unit uses a wide band CCD comb filter for separating Y and C, resulting in high resolution and high image quality.

5. Time-base correction range

The unit has a frame memory, hence the correction range is limitless.

6. Freeze

- Selection of frame freeze or field freeze.
- Selection of auto freeze using the interruption detection circuit of the input signal or intermittent freeze.
- Selection of even or odd fields during field freeze.

7. DOC (dropout correction) provided on all units.

By connecting the unit to the DOC connectors of a VTR, it will detect dropout and perform correction, resulting in an easy-to-see screen.

8. Digital Luminance signal delay line

The timing of Y and C can be finely adjusted (in 16 steps each of 74 ns).

9. ACC (automatic chroma level control) selection

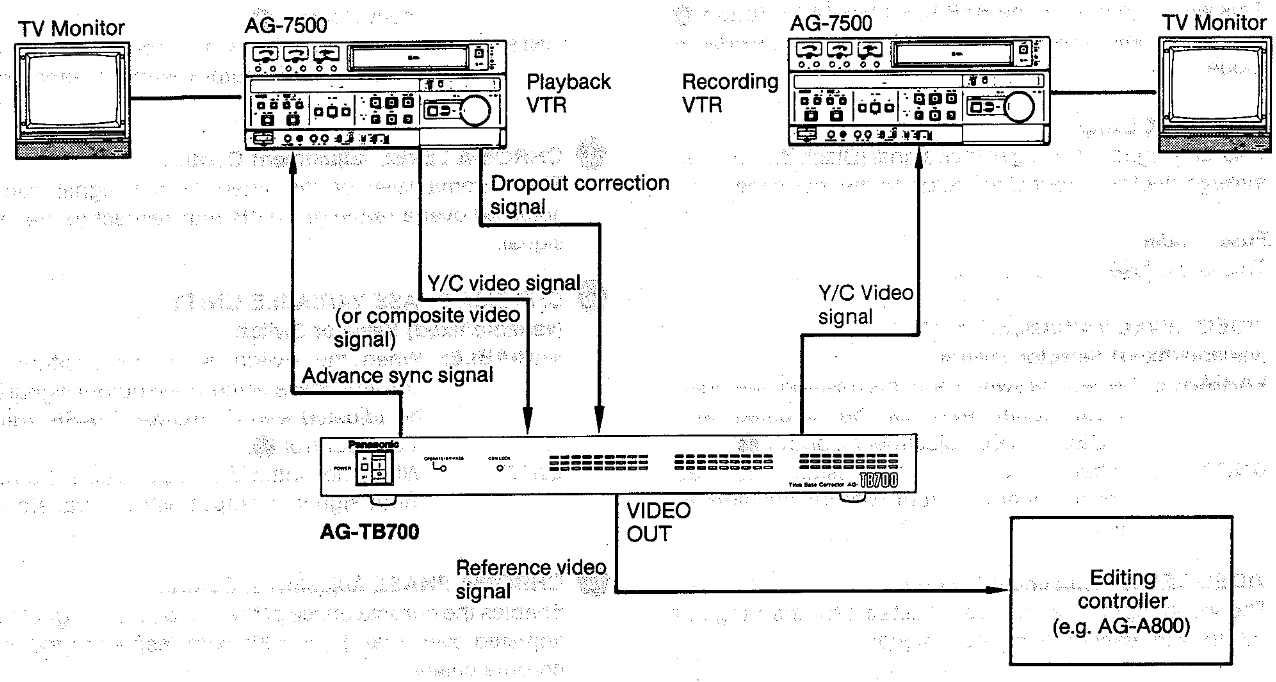
The chroma signal which is reduced during VTR recording or playback is restored to its original level.

10. Black level (variable/unity) selection

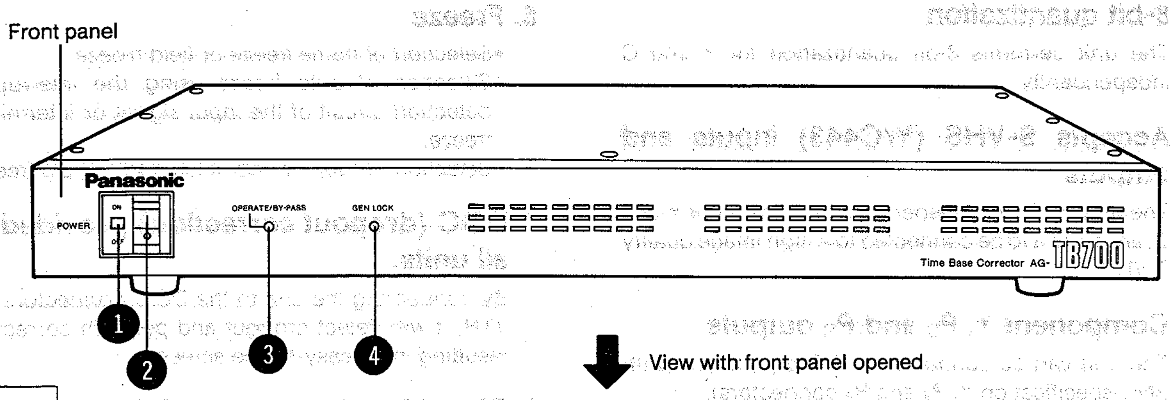
The black level of an input which has a low brightness signal level can be raised, making dark pictures easier to see.

THE SYSTEM WITH THE TBC

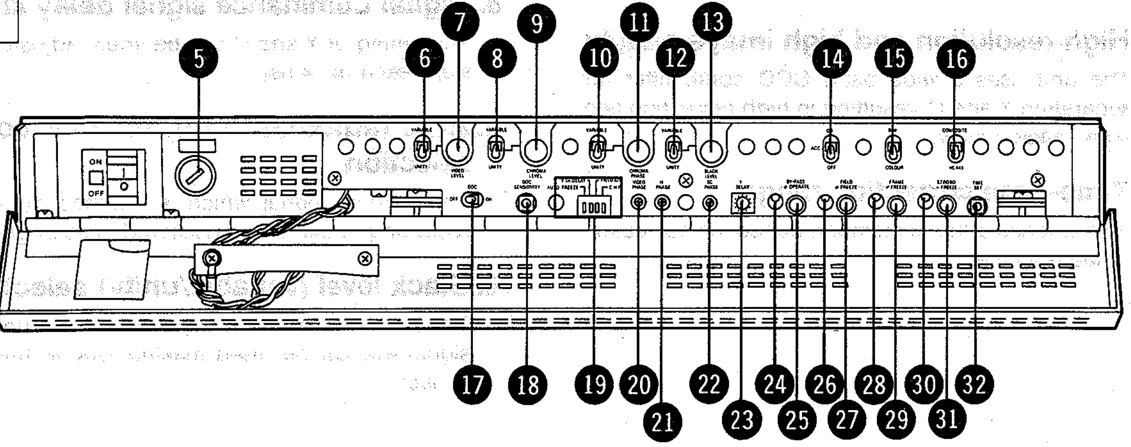
The figure below is the basic system diagram for using the TBC during editing.


TV Monitor
AG-7500
Playback VTR
Recording VTR
AG-7500
TV Monitor
Dropout correction signal
Y/C video signal
(or composite video signal)
Advance sync signal
Y/C Video signal
Panasonic
AG-TB700
VIDEO OUT
Reference video signal
Editing controller (e.g. AG-A800)

CONTROLS AND THEIR FUNCTIONS



Front



① POWER ON/OFF Lamp

② POWER Switch

③ OPERATE/BY-PASS Lamp
This lamp lights when the BYPASS/OPERATE Button ㉕ inside the unit is used to set the unit in the OPERATE mode.

④ GEN LOCK Lamp
This lamp lights when a gen lock signal (Black Burst) is fed through the REF Input Connector on the rear panel.

⑤ Fuse Holder
This is the fuse for the AC inlet.

⑥ VIDEO LEVEL VARIABLE/UNITY (variable/fixed) Selector Switch

VARIABLE:	When the switch is in this position, the video input signal level can be adjusted with VIDEO LEVEL adjustment Control ⑦.
UNITY:	When the switch is in this position, the video input signal is output without transformation.

⑦ VIDEO LEVEL Adjustment Control
The video input level can be adjusted over the range of ±3 dB with respect to the input signal.

⑧ CHROMA LEVEL VARIABLE/UNITY (variable/fixed) Selector Switch

VARIABLE:	When the switch is in this position, the chroma level of the video output signal can be adjusted with CHROMA LEVEL Adjustment Control ⑨.
UNITY:	When the switch is in this position, the video input signal is output without transformation.

⑨ CHROMA LEVEL Adjustment Control
The chroma level of the video output signal can be adjusted over a range of ±3 dB with respect to the input signal.

⑩ CHROMA PHASE VARIABLE/UNITY (variable/fixed) Selector Switch

VARIABLE:	When the switch is in this position, the chroma phase of the video output signal can be adjusted with CHROMA PHASE Adjustment Control ⑪.
UNITY:	When the switch is in this position, the video input signal is output without transformation.

⑪ CHROMA PHASE Adjustment Control
Enables the chroma phase of the video output signal to be adjusted over a range of ±30° with respect to the input chroma phase.

⑫ BLACK LEVEL VARIABLE/UNITY (variable/fixed) Selector Switch

VARIABLE: When the switch is in this position, the black level of the video output signal can be adjusted with BLACK LEVEL Adjustment Control ⑬.

UNITY: When the switch is in this position, the black level of the input signal is output without transformation.

⑬ BLACK LEVEL Adjustment Control

Enables the black level of the video output signal to be adjusted over the range of ±15IRE with respect ot the input signal.

⑭ ACC (Automatic Chroma Control) ON/OFF Selector Switch

This is the automatic control switch for the output chroma level.

When it is in the "ON" position, the burst level of the input signal is automatically adjusted to the reference.

<Caution>

To adjust the chroma level manually, use CHROMA LEVEL Adjustment Control ⑨.

⑮ B/W COLOUR Selector Switch

This switch is used to select the black and white mode or colour mode for the output signal.

<Caution>

- In the black and white mode, the burst signal is absent.
- In the colour mode, the burst signal is added automatically, regardless of the kind of input signal.

⑯ COMPOSITE/YC443 (S-VHS) Selector Switch

This switch is used to select either a composite or YC443 input signal.

⑰ DOC ON/OFF Selector Switch

This switch is used to turn the Dropout correction function ON or OFF.

⑱ DOC SENSITIVITY Switch

This switch is used to adjust the dropout detection sensitivity; the sensitivity increases as the control is turned clockwise.

⑲ DIP Switch

AUTO FREEZE Swtich

Used to perform automatic freeze when the input of video signal is interrupted.

If the interruption of the input signal occurs during setting of ON (up), the freeze is performed to the video signal just before the interruption.

Y 1H DELAY Switch

Used to apply a 1H delay to the Y (luminance) signal only (1H delay when ON).

This switch is used to compensate for luminance-chrominance gap produced when the CNR switch is first turned ON (up) or when performing 1/2" VTR dubbing. When this switch is turned ON (up), the Y signal is delayed by 1H.

FIELD A/B Switch

When turned ON (up) during field freeze, the alternate field will be frozen. When the switch is turned OFF (down) again, the freeze will return to the original field.

CNR (Chroma Noise Reduction) Switch

Use to turn the CNR ON (up) or OFF (down).

By adding the chroma signal alone to the signal 1H earliner, an average value is produced, thus improving the S/N ratio. Further, when the CNR is turned ON (up), the phase error produced by the decoding circuit can be compensated, thus allowing output of correct colour phase. Accordingly, under normal conditions this switch should be left in the CNR OFF (down) position. (However, even when the CNR is OFF, small amount of phase error will be compensated automatically.) During use of freeze operation, this switch electrically turned ON automatically.

⑳ VIDEO PHASE Control

Enables the video phase of the output signal to be adjusted over a range of ±2 μsec with respect to the video phase of the input signal.

㉑ H PHASE Control

Enables the H phase of the output signal to be adjusted over a range of ±3 μsec with respect to the reference signal.

㉒ SC (Sub Carrier) PHASE Control

Enables the sub-carrier of the output signal to be adjusted over a range of ±180° with respect to the H phase of the reference signal.

㉓ Y DELAY Selector Switch

This switch enables the phase of the Y signal to be varied in 16 steps each of 74 ns.

㉔ BY-PASS/OPERATE Lamp

This lamp lights when the button is used to set the unit in the OPERATE mode (a time base corrected signal is output).

㉕ BY-PASS/OPERATE Button

When the power is first turned ON, a time base corrected signal will be output (OPERATE condition). When this button is pressed once, the input video will be bypassed to the video output (BY-PASS condition). Thereafter, each time the button is pressed, the TBC will switch alternately between OPERATE and BY-PASS.

㉖ FIELD FREEZE Lamp

This lamp lights during the field freeze mode (ON).

㉗ FIELD FREEZE Button

This button is used to perform field freeze. The button is set to OFF whenever the Power Switch is first turned ON. If this button is pressed during frame freeze, field freeze mode will be engaged. When pressed during field freeze, the field freeze mode will be released (OFF).

㉘ FRAME FREEZE Lamp

This lamp lights during the frame freeze mode (ON).

㉙ FRAME FREEZE Button

This button is used to perform field freeze. The button is set to OFF whenever the Power Switch is first turned ON. If this button is pressed during field freeze, frame freeze mode will be engaged. When pressed during frame freeze, the frame freeze mode will be released (OFF).

㉚ STROBE FREEZE Lamp

This lamp lights during the intermittent freeze mode.

㉛ STROBE FREEZE Button

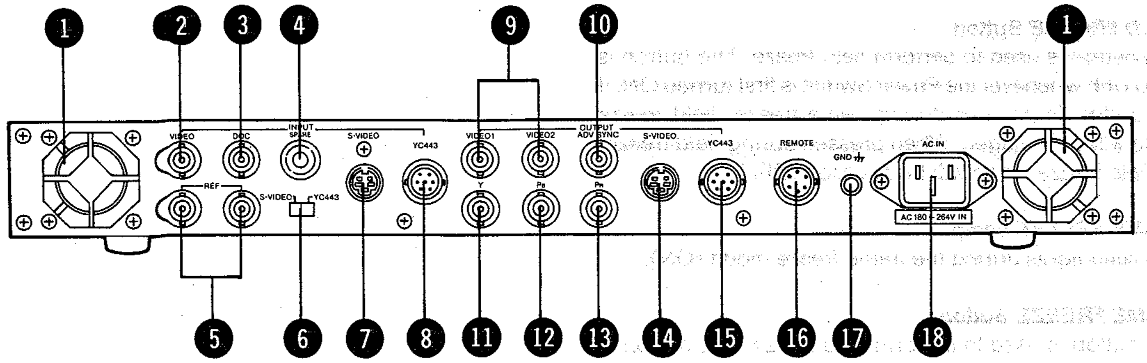
When the freeze button ㉗ or ㉙ is set to ON, this button is used to set the strobe (automatic intermittent) freeze function ON/OFF.

The button is set to OFF whenever the Power Switch is first turned ON. When the button is pressed during strobe freeze, the strobe freeze mode will be released.

㉜ TIME SET Switch

Adjusts the automatic freeze interval time when the STROBE FREEZE Button ㉛ is ON.

Rear



① Fan

② VIDEO Input Connector
This connector is for inputting a composite video signal.
Connect to the VIDEO OUT Connector of a VTR.

③ DOC Input Connector
This is the dropout detection input connector.
Connect to the DOC OUT Connector of a VTR.
When a dropout signal which exceeds the limit of the DOC detection width or the DOC sensitivity is input to the unit, the data that existed 1H previously is automatically output.

④ SPARE Hole (Not used)

⑤ REF Input Connector
This connector is for inputting an external sync signal (black burst signal, etc.) when synchronizing the sync signal generator in this unit with an external reference signal.

⑥ S-VIDEO/YC443 Input Selector
When this switch is set to "S-VIDEO", the signal of ⑦ is selected. When it is set to "YC443", the signal of ⑧ is selected.

⑦ S-VIDEO Input Connector
Connect to a VTR with an S-VIDEO Output Connector.

⑧ YC443 Input Connector
By using the optional 7-pin multi-connector, connect to a VTR.

⑨ VIDEO 1/2 Output Connector

- When the BY-PASS/OPERATE button is set to "OPERATE", the time-base corrected composite video signal is output.
  It is also output when a signal is input to S-VIDEO Input Connector ⑦ or YC443 Input Connector ⑧.
- When the power to this unit is "OFF" or the BY-PASS/OPERATE Button ㉕ is set to "BY-PASS", the signal input to VIDEO Input Connector ② is bypassed to VIDEO 1 Connector directly.

⑩ ADV SYNC Output Connector
By connecting the signal generated from the ADV SYNC output to the EXT SYNC input of a capstan servo VTR, the VTR is synchronised with the ADV SYNC output signal.

⑪ Y Output Connector
Connect to the Y Input Connector of a VTR.
Only the time-base corrected Y (Luminance) signals of the signals input to VIDEO Input Connector ② and YC443 Input Connector ⑧ or S-VIDEO Input Connector ⑦ are output from this connector.

- When the BY-PASS/OPERATE button ㉕ is set to "OPERATE", a Y signal is output.
- When the BY-PASS/OPERATE button ㉕ is set to "BY-PASS", no signal is output.

⑫ P_B Output Connector

⑬ P_R Output Connector

- When the BY-PASS/OPERATE button on the front of the unit is set to "OPERATE", only the colour difference signal of P_B and P_R is output.
- When the BY-PASS/OPERATE button is set to "BY-PASS", no signal is output.

⑭ S-VIDEO Output Connector
This connector is connected to a TV Monitor or VTR provided with an S-VIDEO Input connector.
During operating, the same signal as that output from YC443 Output Connector ⑮ is output from this connector.

⑮ YC443 Output Connector

- If the BY-PASS/OPERATE button is set to "OPERATE", the time-base corrected YC443 signal will be output.
  The composite video signal which is input to VIDEO Input Connector ② is output in Y/C-separated form.
- When the power to the unit is "OFF" or the BY-PASS/OPERATE button is set to "BY-PASS", the input signal is output directly.

⑯ REMOTE Connector
This connector is for connection to a remote controller.

⑰ GND Terminal

⑱ AC Power Connector
Connect this connector to the AC mains using the power cord provided.

PRECAUTION FOR HANDLING UNIT

■ Vibration

Do not use the unit in a location where there is considerable vibration.

■ Magnetism

Do not bring the unit near magnetic fields or electrical equipment which generates strong magnetic fields.

■ Temperature

Under no circumstances use the unit in a very hot or cold location or a location which is exposed to direct sunlight. This is because the performance of the unit may be degraded.

■ Humidity

Electronic equipment does not readily withstand humidity. Do not install the unit in a very humid location or a place where rain is likely to reach it. Under no conditions allow liquids to spill into unit; extensive damage may occur.

■ Cleaning the unit

Before cleaning the unit, turn "OFF" the Power Switch, and be sure to pull out the Power Plug from the power outlet. Clean the cabinet using a soft cloth. If the cabinet is very dirty, immerse the cloth in a diluted solution of dishwashing detergent, wring it hard, and wipe off the dirt, then finish the cabinet with a dry cloth. Do not use paint thinner or benzine.

■ Storing the unit

1. Do not store the unit in a very hot or cold location.
2. Under no circumstances leave the unit outdoors.
3. Be sure and remove the cassette tape from the unit.
4. To prevent a possible breakdown, when not using the unit for some time turn "OFF" the Power Switch and be sure to withdraw the Power Plug from the power outlet. (Under no circumstances pull directly on the power cord because of the risk of breaking the conductor inside.)

■ Installation Conditions

1. Use the unit in a horizontal position.
2. Do not block the ventilation holes in the unit. To improve air circulation, ventilation holes are provided at the top of the unit. Keep the rear of the unit at least 15 cm, and the sides at least 5 cm, away from any walls. Also, do not block up the ventilation holes underneath the unit with carpet, etc.
3. Before moving the unit from one place to another, be sure and remove the cassette tape.
4. To ensure that the unit can be used without breakdown, do not place objects on top of it.
5. When using the unit on a base, provide a firm base.

- ■ When using the unit, do not block the ventilating holes at the top.
- ■ When the mounting this unit on a rack, use a rack which is provided with a fan.
- ■ In the event of an abnormality, immediately turn the Power Switch "OFF" and remove the Power Plug from the power outlet, then contact the shop where you purchased the unit. If you continue to use the unit without removing the cause of the abnormality, the extent of the fault may increase or an unforeseen accident may result.

DISASSEMBLY PROCEDURES

1. DETAILED DISASSEMBLY METHOD

1–1. Top Panel Removal

1. Unscrew the 8 screws (A) on the Top Panel (Figure D1).
2. Open the Front Panel and lift the Top Panel from the unit.

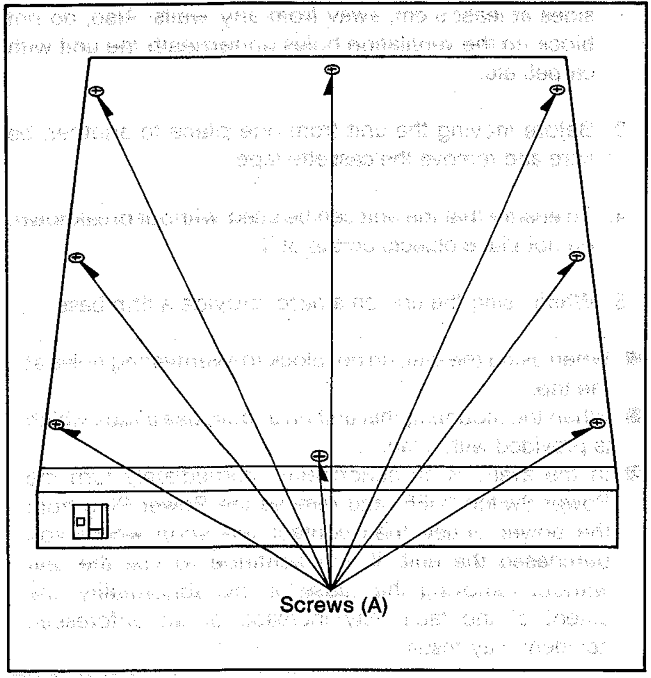


Fig. D1 Top Panel Removal

1–2. Process P.C.Board Removal

1. Unscrew the 8 screws (B) and the 1 post nut (C) on the Process P.C.Board (Figure D2).
2. Remove the 11 connectors on the Process P.C.Board.
3. Remove the Process P.C.Board from the unit.

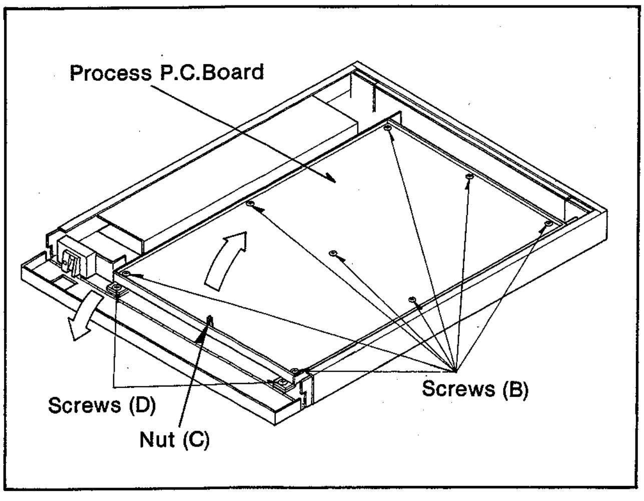

Process P.C.Board
Screws (D)
Nut (C)
Screws (B)

Fig. D2 Process P.C.Board Removal

1–3. DIGITAL P.C.Board Removal

1. Unscrew the 2 screws (D) (Figure D2)
2. Lift the front of the P.C.Boards with frame to the vertical derection so that the P.C.Boards with frame can be standed as shown in Figure D3.
3. Remove the 9 connectors on the Digital P.C.Board.
4. Unscrew the 9 screws (E) on the Digital P.C.Board (Figure D3).

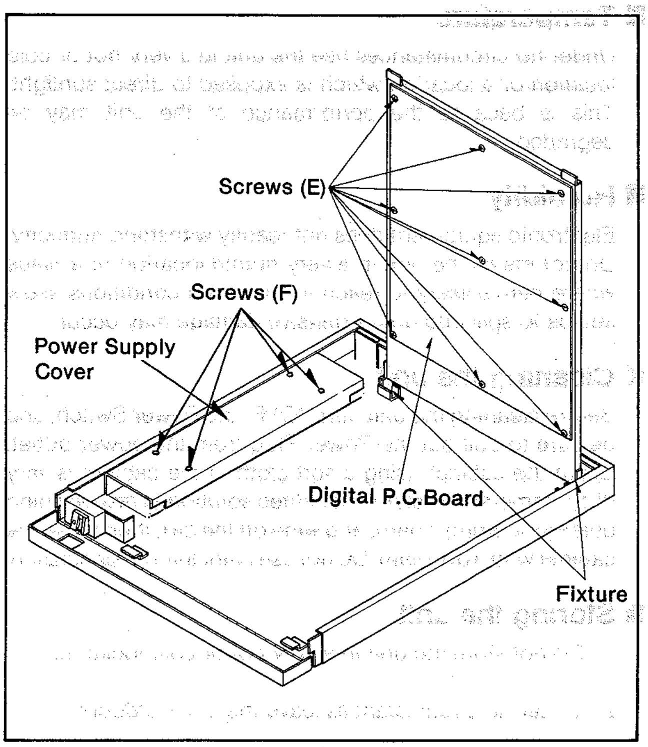

Screws (E)
Screws (F)
Power Supply Cover
Digital P.C.Board
Fixture

Fig. D3 Digital P.C.Board and Power Supply Cover Removal

1–4. Power Supply Unit Removal

1. Unscrew the 4 screws (F) and remove the Cover Plate (Figure D3).
2. Unscrew the 2 post nuts (G) and screw (H) (Figure D4).
3. Remove the 4 connectors (I) on the Power Supply unit. (Figure D4).
4. Remove the Power Supply unit from the unit.

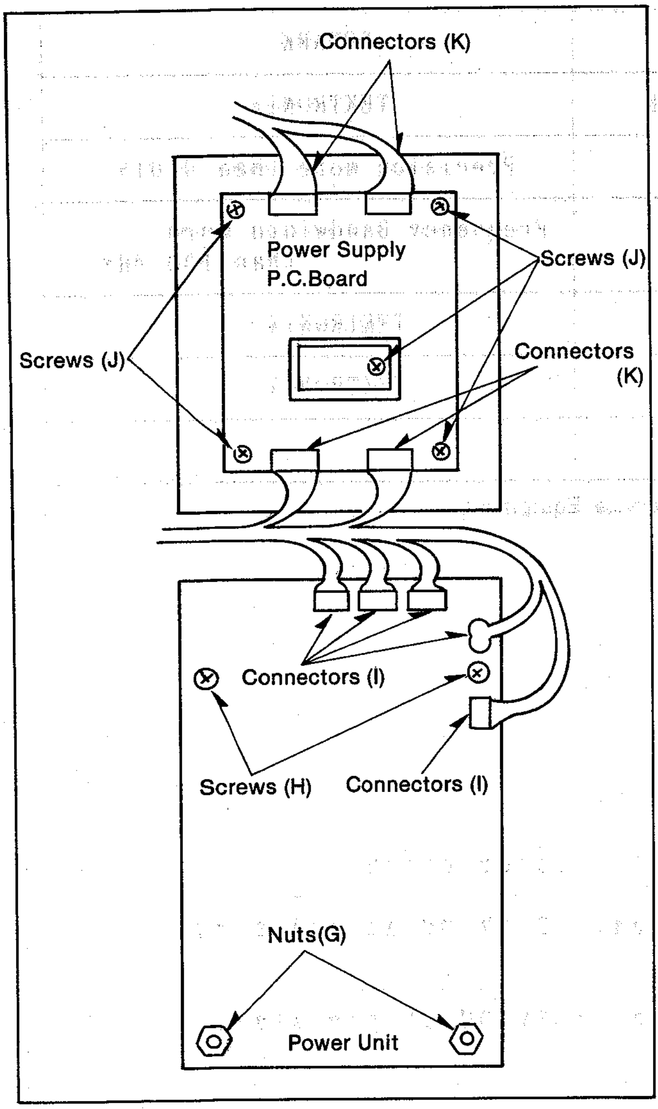

Connectors (K)
Power Supply P.C.Board
Screws (J)
Screws (J)
Connectors (K)
Connectors (I)
Screws (H)
Connectors (I)
Nuts(G)
Power Unit

Fig. D4 Power Supply Unit and P.C.Board Removal

1–5. Power Supply P.C.Board Removal

1. Unscrew the 4 screws (F) and remove the power supply cover (Figure D3).
2. Unscrew 5 screws (J).
3. Remove the 4 connectors (K) on the Power Supply P.C.Board (Figure D4)
4. Remove the Power Supply P.C.Board.

1–6. Rear Panel Removal

1. Unscrew the 6 screws (L) (Figure D5).
2. Remove the Rear Panel from the unit.

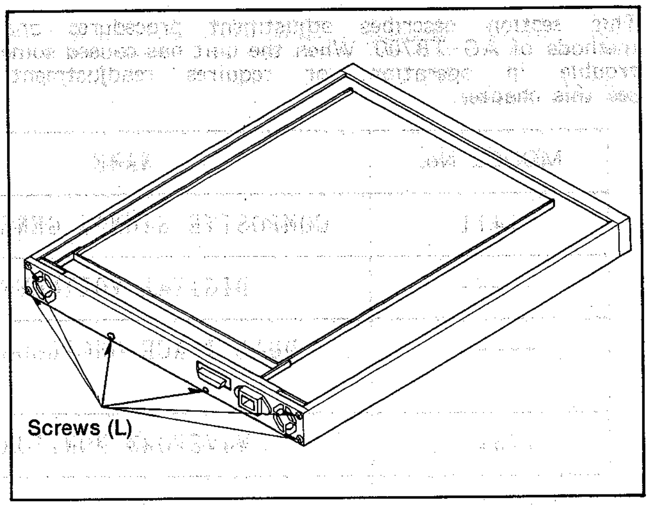


Fig. D5 Rear Panel Removal

ELECTRICAL ADJUSTMENT PROCEDURES

1. INSTRUCTION FOR ADJUSTMENT

This section describes adjustment procedures and methods of AG–TB700. When the unit has caused some trouble in operation, or requires readjustment, see this chapter.

1–1. TEST & SERVICE EQUIPMENT

Measurement devices used for adjustment must have performances equivalent to or above the following.

Note : Color bar is EBU color bar (level 75%)

MODEL No.	NAME	REMARK
1411	COMPOSITE SIGNAL GENETATOR	TEKTRONIX
-----	DIGITAL VOLTMETER	Precision more than 0.01V
-----	DUAL TRACE OSCILLOSCOPE	Frequency Bandwidth more than 100 MHz
1731	WAVEFORM MONITOR	TEKTRONIX
1721	VECTOR SCOPE	TEKTRONIX
-----	COLOR MONITOR	

Figure 1–1–1. Test & Service Equipment

1–2. TEST POINTS

1–2–1. PROCESS P.C.Board

Each test point provided on the printed circuit board is described below.
(EBU color bar signal is connected to VIDEO IN, and BB to GENLOCK IN, and each volume on the front face is set on UNITY side, and INPUT SELECT to COMPOSITE.)

Test Point	Signal Description
TP 1 (3-C)	Comb filtered Y signal, 2.2V DC at pedestal, 0.6V p-p positive
TP 2 (3-C)	Y signal from Switch, 1.3V DC at pedestal, 0.6V p-p positive
TP 3 (1-M)	GND
TP 4 (3-R)	Y signal to ADC input, 0.6V DC at pedestal, 1.5V p-p positive
TP 5 (1-V)	GND
TP 6 (10-A)	Composite signal after L.P.F. 0.8V DC at pedestal, 2V p-p positive
TP 7 (14-A)	GND

Figure 1–2–1 (A). Test Points and Signals

Test Point	Signal Description
TP 8 (3-B)	Comb filtered Chroma signal, 0.7V p-p at pedestal, 1V p-p positive
TP 9 (7-C)	GND
TP 10 (4-R)	Burst R-Y signal to ADC input, 1.6V DC, 1.2V p-p negative
TP 11 (7-F)	GND
TP 12 (7-R)	Burst B-Y signal to ADC input, 1.6V DC, 1.2V p-p negative
TP 13 (8-U)	GND
TP 14 (12-J)	GND
TP 15 (12-K)	H. VCO error voltage, DC - 3V
TP 16 (18-D)	Chroma signal for decoding, DC 7.8V DC, 0.55V p-p
TP 17 (18-D)	GND
TP 18 (17-J)	GND
TP 19 (12-N)	Separated SYNC, TTL level, Negative
TP 20 (13-N)	3μ sec. pulse, TTL level, Negative
TP 21 (14-R)	GND
TP 22 (14-V)	GND
TP 23 (21-C)	S (Y/C 443) chroma signal, -0.5V DC, 2V p-p
TP 24 (19-T)	GND
TP 25 (22-L)	DAC low pass filtered Y signal, -5.5V DC at pedestal, 2V p-p positive

Figure 1-2-1 (B). Test Points and Signals

Test Point	Signal Description
TP 26 (23-J)	Burst R-Y signal to encoder, 3.2V DC at padestal, 0.9V p-p negative
TP 27 (24-L)	Burst B-Y signal to encoder, 3.2V DC at pedestal, 0.9V p-p negative
TP 28 (26-P)	GND
TP 29 (27-J)	GND
TP 30 (27-R)	GND
TP 31 (4-L)	Burst lock VCO error, 3.2V DC
TP 32 (8A)	Input Chroma signal, 0.5V DC at pedestal, 0.7V p-p

Figure 1-2-1 (C). Test Points and Signals

1-2-2. Power Unit

The terminals of power source connectors of PROCESS P.C.Board and DIGITAL P.C.Board are measured by a digital voltmeter.

P.C.Board / Connector	Pin	Specification
PROCESS P.C.Board CN - 105 (27 - V)	1	11.94 ~ 12.02V
	3	- 11.92 ~ 12.02V
	5	5.18 ~ 5.22V
	2 4 6	GND
DIGITAL P.C.Board CN - 205 (2 - M)	1 3 5	GND
	2	5.17 ~ 5.21V
	4	- 11.93 ~ 12.02V
	6	+ 11.95 ~ 12.02V

Figure 1-2-2. Power Supply Voltage

1–2–3. Internal Jumpers and Controls on the P.C. Board

1) PROCESS P.C.BOARD

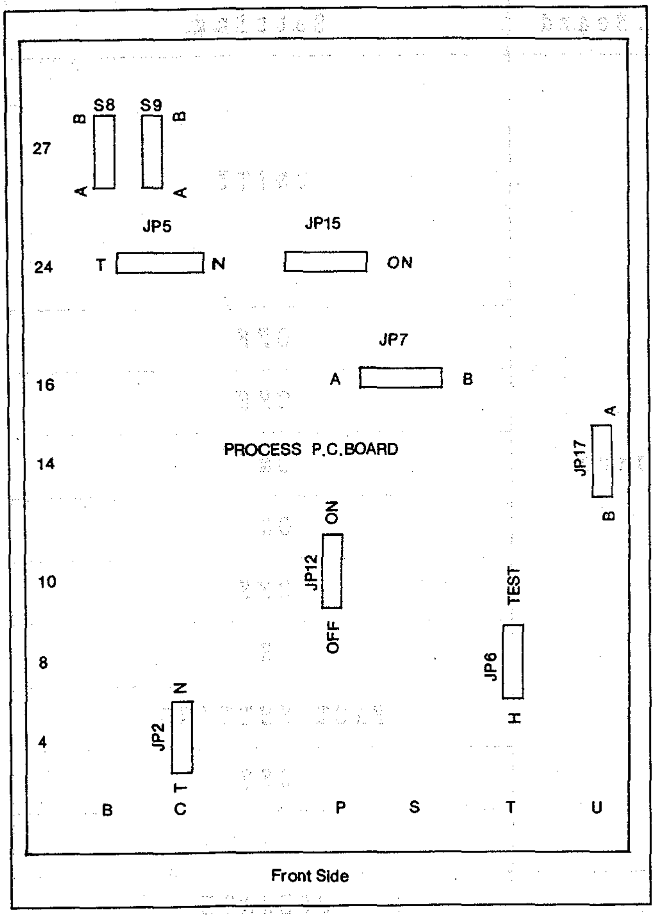

S8
S9
B
A
B
A
27
JP5
JP15
24
T
N
ON
JP7
A
B
16
PROCESS P.C.BOARD
14
JP17
A
B
ON
JP12
OFF
10
TEST
JP6
H
8
N
JP2
T
4
B
C
P
S
T
U
Front Side

Figure 1–2–a.

JP2
N : Normally set this side. (Y signal's SC trap is set to OFF.)

JP5
T : Normally set this side. (Composite output's SC trap is set to ON.)

JP6
H : Normally set this side. (For the alignment of shutlle mode detection)

JP7
Factory setting. Do not change the setting.

JP12
OFF : Normally set this side.

JP15
ON : When this side is set, the sync signal is added to the PR OUT signal.
OFF: When this side is set, the sync signal is not added to the PR OUT signal. (Factory set is OFF side.)

JP17
A : Normally set this side.
B : When BETACAM is used. (Factory set is A side.)

S8, S9
A : When this side is set, the Y/C443–2 (7–pin) signal can be bypassed from IN to OUT during the Y/C input mode.
B : When this side is set, the S–Y/C (4–pin) signal can be bypassed from IN to OUT during the Y/C input mode. (Factory set is A side.)

2) DIGITAL P.C.BOARD

JP2
VITS: When this side is set, the vertical blanking is released to pass through the VITS signals.
NOR : When this side is set, the normal vertical blanking is applied to the unit. (Factory set is NOR.)

JP6
Normally set open. (Alignment use only.)

SW9
Y delay setting. (Factory setting) Do not change the setting.

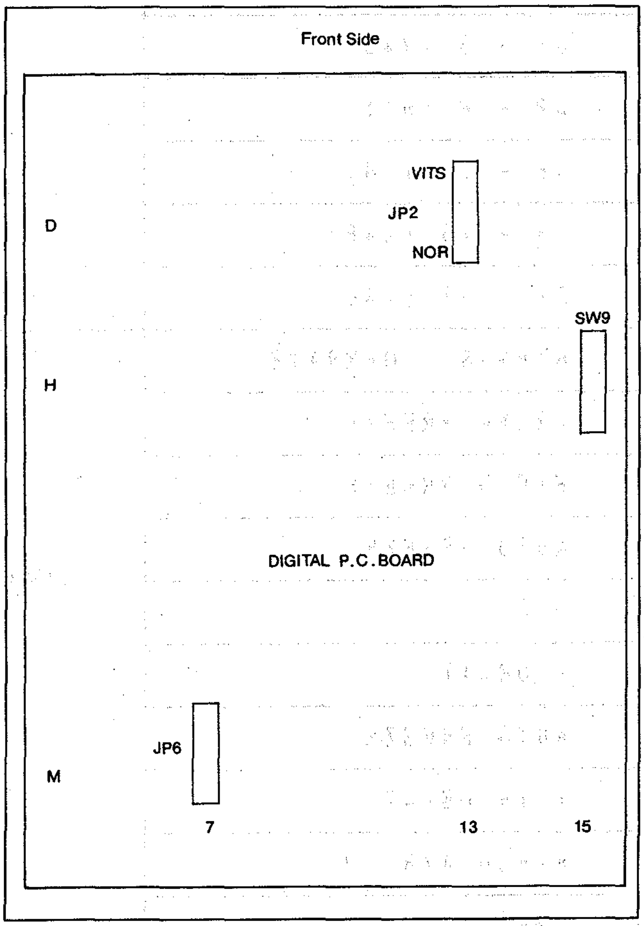

Front Side
VITS
JP2
NOR
D
SW9
H
DIGITAL P.C.BOARD
JP6
M
7
13
15

Figure 1–2–b.

1-3. ADJUSTMENT PROCEDURE

1-3-1. Position of the Switches and Controls for the Adjustment.

Set switches and volumes to the following condition unless otherwise specified.

Name of SW/VR	Name of P.C.Board	Setting
VIDEO LEVEL	PROCESS P.C.Board	UNITY
CHROMA LEVEL		
CHROMA PHASE		
BLACK LEVEL		
ACC		OFF
B/ W/ COLOUR		OFF
JP - 2 (3A)		ON
JP - 12 (11P)		ON
JP - 5 (24B)		OFF
JP - 6 (9T)		H
JP - 7 (17S)		FACT SETTING
JP - 15 (24P)		OFF
JP - 17 (14U)		A
BYPASS / OPERATE	DIGITAL P.C.Board	OPERATE
FRAME FREEZE		OFF
FIELD FREEZE		OFF
AUTO FREEZE		OFF
DOC		ON
Y DELAY		8
AUTO FREEZE		OFF
Y 1H DELAY		OFF
FIELD A/B		OFF
CNR		OFF
JP - 2 (12D)		NOR
JP - 6 (7M)		OPEN
SW 9 (15H)		FACT SETTING

Figure 1-3-1. Position of Switches and Controls

1-3-2. PROCESS P.C.Board

The Digital P.C. Board and Process P.C. Board should be normaly operated in order to operate AG-TB700 normaly. The adjustment method is described here.

COMP mode

Input measurement signals in VIDEO IN (BNC connector).
Set COMP/Y/C switching unit to COMP side. Other switches should be in the conditions in Figure 1-3-1 unless otherwise specified.

Y/C mode

Input a Y/C colour bar signal to Y/C443 (Pin 7 connector) or S connector.
Use the switch on the rear panel for switching Y/C443 and S.
Set COMP/ Y/C443 switch to Y/C443 side.
Other switches should be in the conditions in Figure 1-3-1 unless otherwise specified.

INTERNAL mode

Take off the GENLOCK IN connector and set the INTERNAL mode.

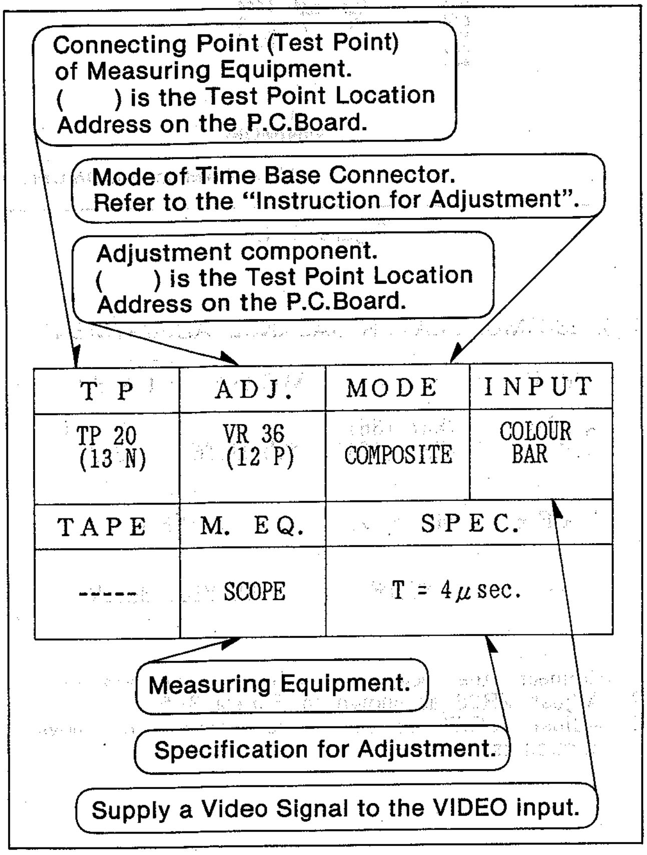
B/W mode

Set B/W/COLOR switch to B/W.

ACC mode

Turn on ACC ON/OFF switch.

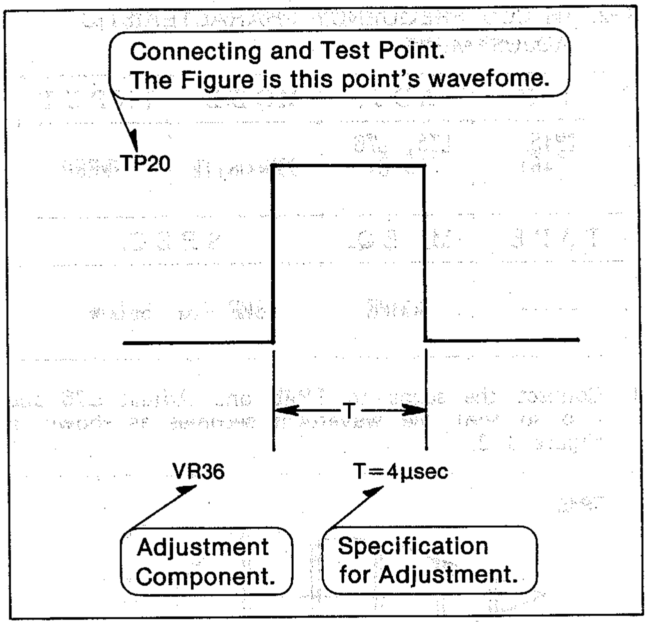
Note : Do not raise or lower the Process P.C.Board with the front panel closed because it may hit the volume or switch.



Connecting Point (Test Point) of Measuring Equipment. ( ) is the Test Point Location Address on the P.C.Board.
Mode of Time Base Connector. Refer to the "Instruction for Adjustment".
Adjustment component. ( ) is the Test Point Location Address on the P.C.Board.

T P	ADJ.	MODE	INPUT
TP 20 (13 N)	VR 36 (12 P)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	T = 4μsec.	

Measuring Equipment.
Specification for Adjustment.
Supply a Video Signal to the VIDEO input.



Connecting and Test Point. The Figure is this point's wavefome.
TP20
T
VR36
T=4µsec
Adjustment Component.
Specification for Adjustment.

2. POWER SUPPLY BOARD SECTION ADJUSTMENT

2-1. POWER SUPPLY VOLTAGE ADJUSTMENT

T P	ADJ.	MODE	INPUT
Pin 5 CN 105	R 85	COMPOSITE	-----
TAPE	**M. EQ.**	**SPEC.**	
-----	V.D.M.	5.2V DC	

1. Connect the D.V.M. to pin 5 of CN105 and adjust R85 so that the DC voltage is 5.2V DC.

3. PROCESS BOARD SECTION ADJUSTMENT PROCEDURES

3-1. INPUT CHROMA LEVEL ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP32 (8A)	VR 12 (8 A)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	V = 0.75V P-P	

1. Adjust VR12 so that chroma signal level becomes 0.75Vp-p.

3–2. 1H CCD FREQUENCY CHARACTERISTIC ADJUSTMENT

T P	A D J.	M O D E	I N P U T
TP45 (14B)	L75, L76 (15 B)	COMPOSITE	SWEEP
T A P E	M. E Q.	S P E C.	
-----	SCOPE	SEE FIG. BELOW	

1. Connect the scope to TP45 and Adjust L75 and L76 so that the waveform becomes as shown in Figure 3–2.

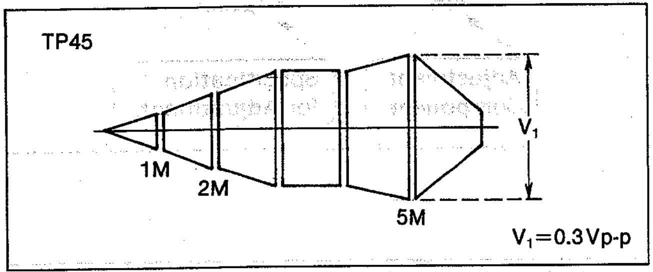


Figure 3–2.

3–3. 2H CCD FREQUENCY CHARACTERISTIC ADJUSTMENT

T P	A D J.	M O D E	I N P U T
-----	VR 18 (12 B)	COMPOSITE	-----
T A P E	M. E Q.	S P E C.	
-----	SCOPE	MAX (CW) POSITION	

1. Set VR18 at maximum position (CW).

T P	A D J.	M O D E	I N P U T
TP43 (14B)	L 27 L 29	COMPOSITE	SWEEP
T A P E	M. E Q.	S P E C.	
-----	SCOPE	SEE FIG. BELOW	

2. Connect the scope to TP43 and adjust L27 and L29 so that the waveform becomes as shown Figure 3–3.

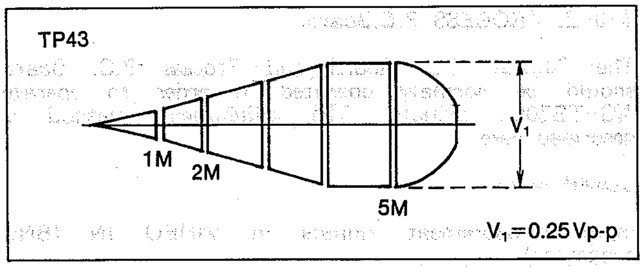


Figure 3–3.

3–4. COMB FILTER BALANCE ADJUSTMENT

T P	A D J.	M O D E	I N P U T
TP 8 (3 B)	VR 16 (8C) VR 17 (11B)	COMPOSITE	MULTI BURST
T A P E	M. E Q.	S P E C.	
-----	SCOPE	4MHz, 4.8MHz = MINIMUM	

1. Connect the scope to TP8 and adjust VR16 and VR17 so that 4MHz and 4.8MHz burst signals are minimum.

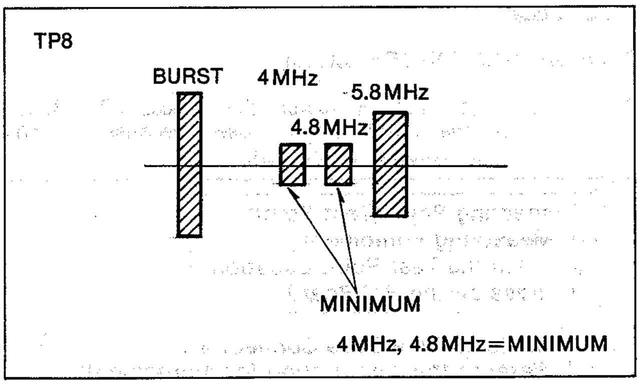


Figure 3–4.

3–5. 2SC MODULATOR BALANCE ADJUSTMENT

T P	A D J.	M O D E	I N P U T
Q 37-C (10 E)	VR27 (8H) VR28 (12J)	COMPOSITE	COLOUR BAR
T A P E	M. E Q.	S P E C.	
-----	SCOPE	SEE FIG. BELOW	

1. Connect the scope to collector of Q37.
2. Adjust VR28 as shown in Figure 3–5.
3. Adjust VR27 so that the carrier at pedestal portion is minimum.

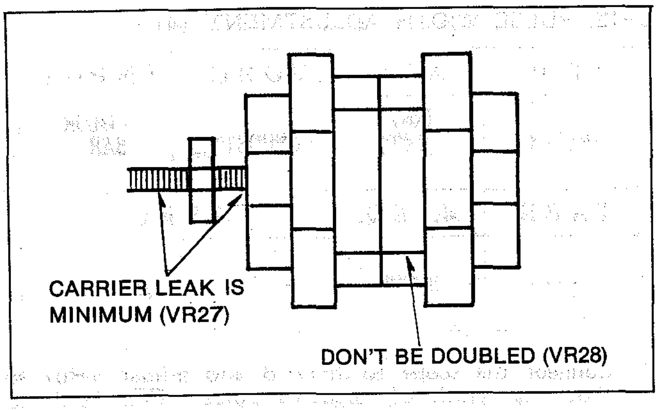


Figure 3–5.

3–6. BURST LOCK VCO ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP 31 (3 L)	VR 9 (2 M)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	V = 3.0V DC SEE FIG. BELOW	

1. Connect the scope to TP31 and adjust VR9 so that the DC voltage is 3.0V DC.
2. Set the scope to the AC mode and observe the waveform by the V rate, and readjust VR9 more precisely so that the waveform becomes as shown in Figure 3–6.

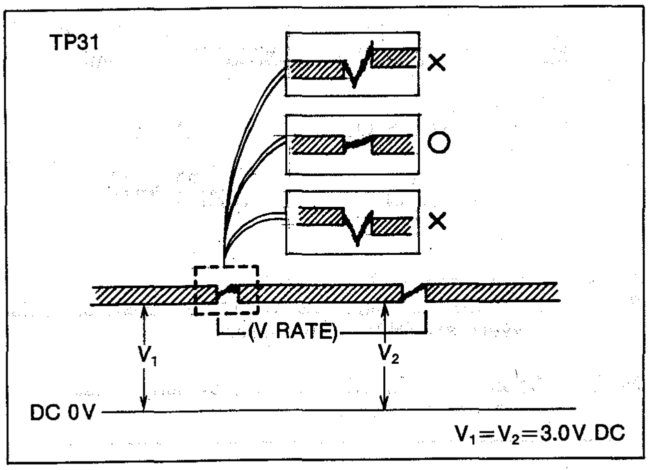


Figure 3–6.

3–7. COMB FILTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP 1 (2 B)	VR 14 (6B) VR 15 (7B)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	Y SIGNAL CARRIER LEAK = MIN	

1. Adjust VR14 and VR15 so that the chrominance component in luminance signal at TP1 is minimum.

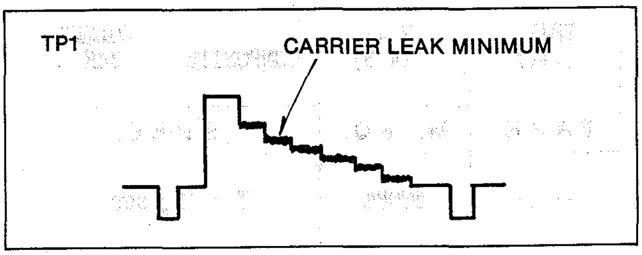


Figure 3–7.

3–8. IMPUT SYNC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP 19 (13 N)	-----	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	SYNC = TTL LEVEL	

1. Confirm that the negative sync pulse (TTL level) is appeared at TP19.

3–9 . PULSE WIDTH ADJUSTMENT (1)

TP	ADJ.	MODE	INPUT
TP 20 (13 N)	VR 36 (12 P)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 4μsec.	

1. Adjust VR39 so that the width of positive pulse (TTL level) at TP20 is 4 Usec.

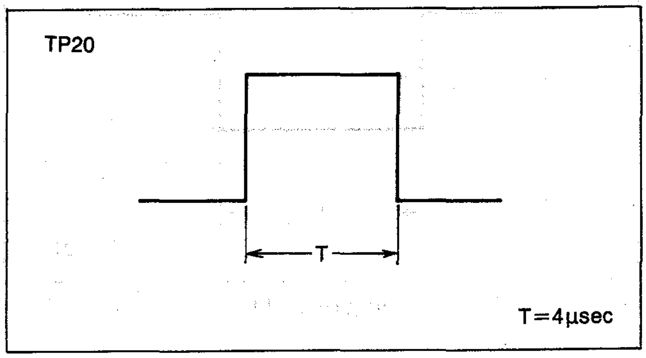


Figure 3–9.

3–10. PULSE WIDTH ADJUSTMENT (2)

T P	ADJ.	MODE	INPUT
TP47 (14U)	VR 41 (14 S)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 43μsec.	

1. Adjust VR41 so that the width of positive pulse (TTL level) at TP47 is 43 Usec.

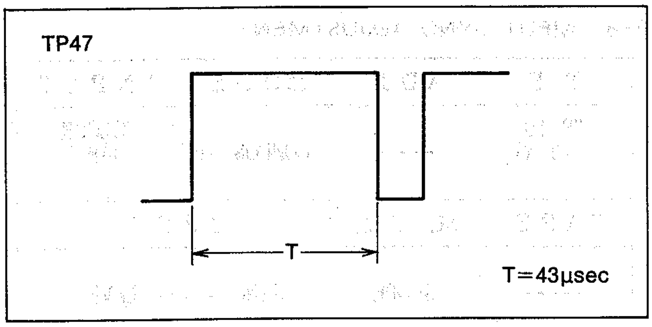


Figure 3–10.

3–11. PULSE WIDTH ADJUSTMENT (3)

T P	ADJ.	MODE	INPUT
IC49 4 pin	VR40 (12R)	COMPOSITE	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 19 H	

1. Connect the scope to 4 pin of IC49 and adjust VR40 so that the width of negative pulse (TTL level) is 19H.

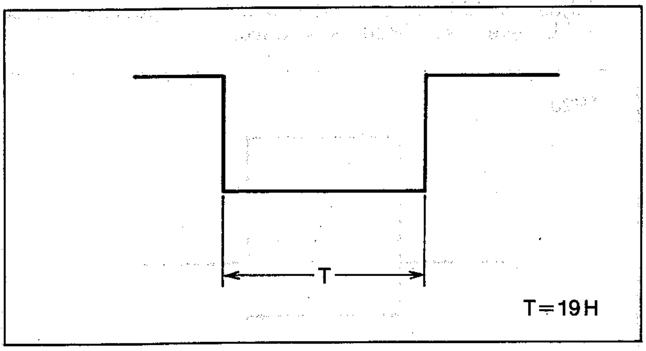


Figure 3–11.

3–12. PULSE WIDTH ADJUSTMENT (4)

T P	ADJ.	MODE	INPUT
JP17-B	VR67 (14T)	COMPOSITE	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 4.7 μsec.	

1. Connect the scope to JP17–B and adjust VR67 so that the width of negative pulse (TTL level) is 4.7 Usec.

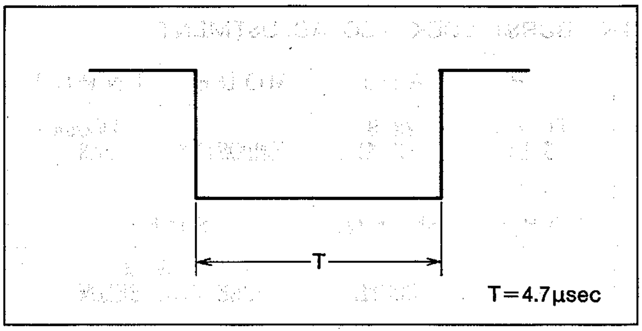


Figure 3–12.

3–13. FF MODE PULSE ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP41 (8S)	VR 39 (10 S)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 68μsec. (JP6 = "T")	

1. Set JP6 to the TEST position.
2. Adjust VR39 so that the width of position pulse (TTL level) at TP41 is 68 Usec.

Note : When you finish this adjustment, reset JP6 to the H position.

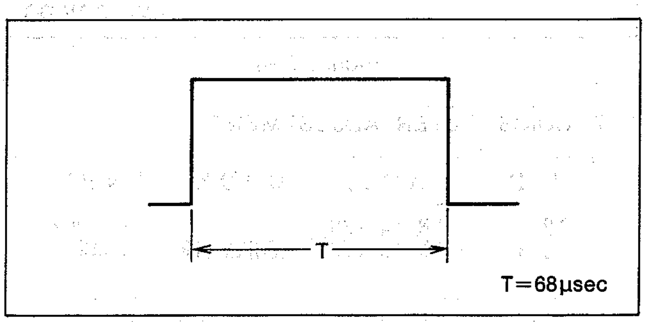


Figure 3–13.

3–14. REW MODE PULSE ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP42 (8S)	VR 38 (10 R)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 60µ sec.	

1. Adjust VR38 so that the width of positive pulse (TTL level) at TP42 is 60 Usec.

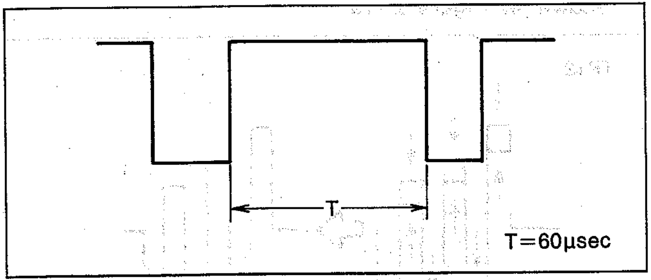


Figure 3–14.

3–15. SHUTTLE MODE CNFIRMATION

T P	ADJ.	MODE	INPUT
IC40-8 (9 P)	-----	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	LOGIC = HIGH (TTL LEVEL)	

1. Connect the scope to pin 8 of IC 40 and confirm that the pulse is "High" level.

Note : If the pulse is not "High" level, the detection pulse circuit on comparator is something trouble.

3–16. H. VCO ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 15 (12 K)	L 34 (12K) VR 32 (12M)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	V = -3V DC ERROR WFM = 0.4V P-P	

1. Adjust L34 so that the voltage at TP15 is –3V DC.
2. Adjust VR32 so that the portion at the error is 0.4Vp–p as shown in Figure 3–16–1. (This VR controls the jitter on the input signal.)

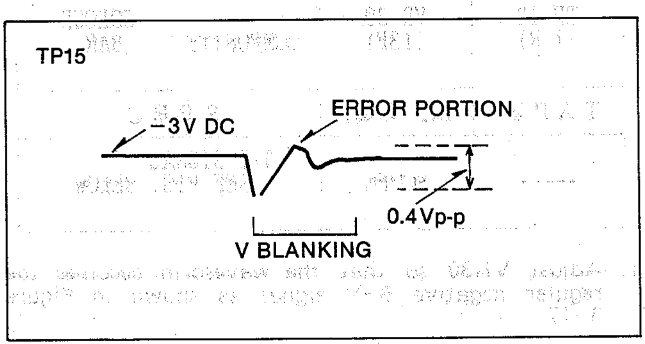


Figure 3–16–1.

T P	ADJ.	MODE	INPUT
IC35-6 (16 L)	VR 31 (15 K)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	T = 14µ sec.	

3. Adjust VR31 so that the rising edge of the trapezoid waveform at pin 6 of IC35 is 14 Usec as shown in Figure 3–16–2.

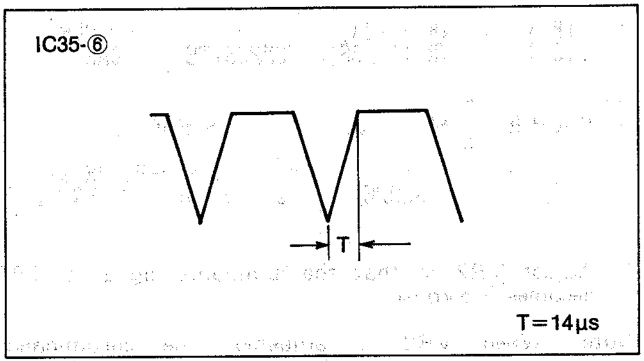


Figure 3–16–2.

3–17. CHROMINANCE DECODER PHASE ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 12 (7 R)	VR 30 (13F)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	B-Y SIGNAL = SEE FIG. BELOW	

1. Adjust VR30 so that the waveform becomes the regular negative B–Y signal as shown in Figure 3–17.

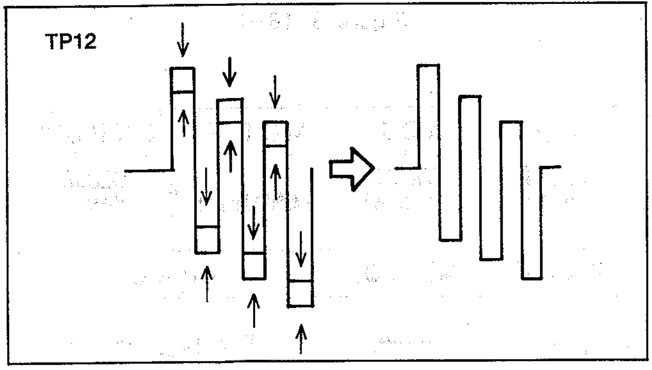


Figure 3–17.

3–18. Y A/D CONVERTER ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 4 (3 R)	VR 2 (2A) VR 11 (3S)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	V1 = 1.5V P-P (VR 2) V2 = 0.65V P-P (VR 11)	

1. Adjust VR2 so that the luminance signal at TP4 becomes 1.5Vp–p.

Note : When VR2 is adjusted, the chrominance component on the luminance signal may increase so that the chrominance level confirmation and readjustment are required (see item 7).

2. Adjust VR11 so that the level at pedestal is 0.05V DC.

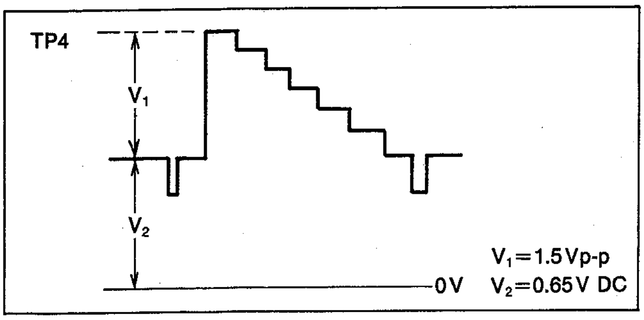


Figure 3–18.

3–19. B–Y SIGNAL ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 12 (6 R)	VR 63 (17 B)	Y/C	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	B-Y SIGNAL SEE FIG. BELOW	

1. Set the Y/C 443 mode.
2. Adjust VR63 so that the waveform at TP12 becomes the regular negative B–Y signal as shown in Figure 2–19.

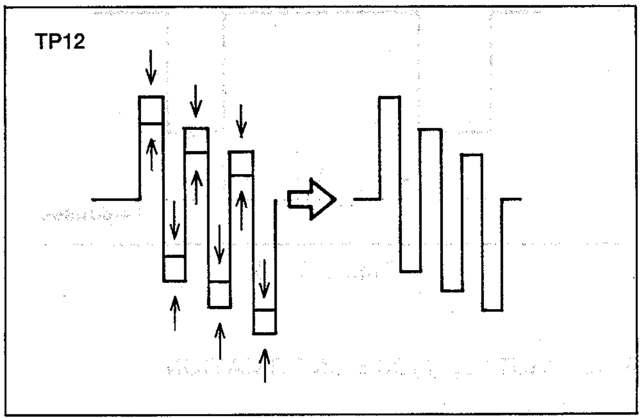


Figure 3–19.

3–20. CHROMA A/D CONVERTER ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 12 (7 R)	VR 25 (6M) VR 26 (7S)	Y/C	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	V1 = 1.2V P-P (VR 25) V2 = 1.6V DC (VR 26)	

1. Supply the Y/C colour bar signal to the Y/C inputs.
2. Adjust VR25 so that the level at TP12 becomes 1.2Vp–p.
3. Adjust VR26 so that the DC level at the pedestat is 1.6V DC as shown in Figure 3–20.

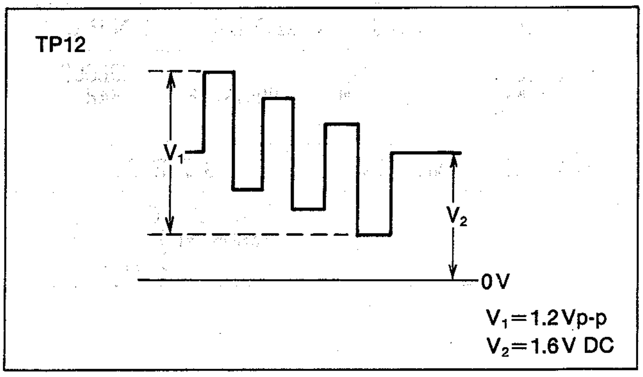


Figure 3–20.

3-21. WAVEFORM ADJUSTMENT (1)

T P	ADJ.	MODE	INPUT
TP10 (4R)	VR23 (4M) VR24 (5S)	Y/C 443	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	LEVEL = 1.2Vp-p PEDESTAL = 1.6V DC	

1. Adjust VR23 so that the level at TP10 becomes 1.2Vp-p.
2. Adjust VR24 so that DC level at the pedestal is 1.6V as shown in Figure 3-21.

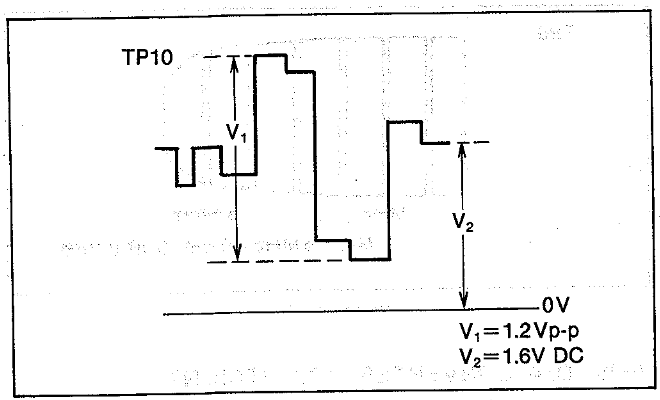


Figure 3-21.

3-22. WAVEFORM ADJUSTMENT (2)

T P	ADJ.	MODE	INPUT
TP12 (7R)	VR19 (15B) VR62 (16E)	COMPOSITE and Y/C 443	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	LEVEL = 1.2Vp-p PEDESTAL = 1.6V DC	

1. Adjust VR19 so that the level at TP12 (COMP mode) becomes 1.2 Vp-p.
2. Adjust VR62 so that the phase at COMP mode becomes the same in Y/C mode.

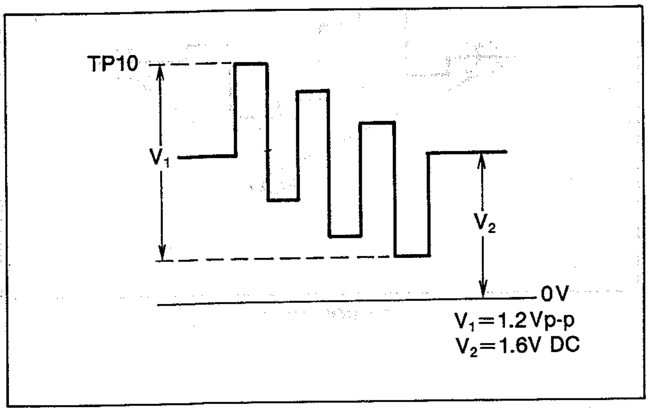


Figure 3-22.

3-23. CHROMA ACC ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP12 (7R)	VR33 (19E) VR62 (16E)	COMPOSITE (ACC ON)	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	LEVEL = 1.2Vp-p PHASE: ACC ON AND OFF ARE SAME	

1. Set the unit in the ACC "ON" mode.
2. Adjust VR33 so that the level at TP12 (ACC ON) becomes 1.2 Vp-p.
3. Adjust VR62 so that the phase at TP12 (ACC ON) become the same in ACC "OFF" mode.

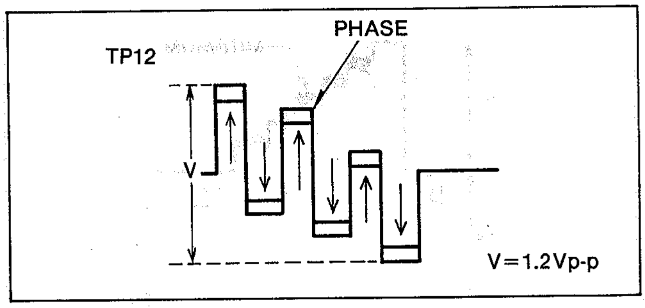


Figure 3-23.

3-24. NOTCH MODE ADJUSTMENT (CHROMA)

T P	ADJ.	MODE	INPUT
TP16 (6R)	VR29 (15D) VR20 (15B)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	SEE FIG. BELOW (JP12 OFF)	

1. Set JP12 to "OFF" position.
2. Connect the scope to TP12 and adjust VR29 so that the waveform becomes as shown in Figure 3-24.
3. Adjust VR20 so that the waveform level becomes 1.2Vp-p.

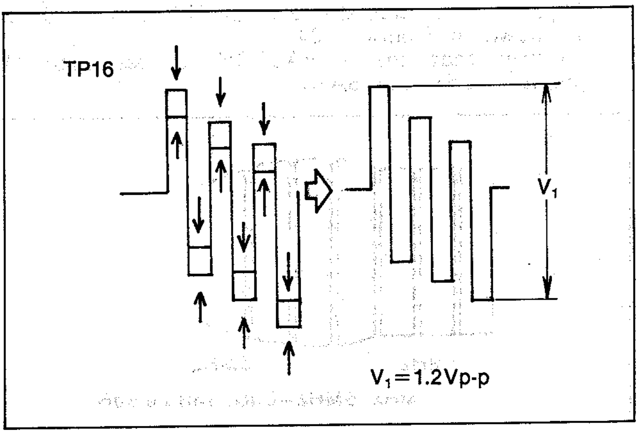


Figure 3-24.

3-25. NOTCH MODE ADJUSTMENT (LUMINANCE)

T P	ADJ.	MODE	INPUT
TP4 (4R)	VR1 (1A) VR10 (2B)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	SEE FIG. BELOW (JP12 OFF)	

1. Connect the scope to TP4 and adjust VR1 so that the luminance level becomes 1.5Vp-p.
2. Adjust VC10 so that the chroma component in luminance signal becomes minimum.
3. Reset JP12 to "ON" position.

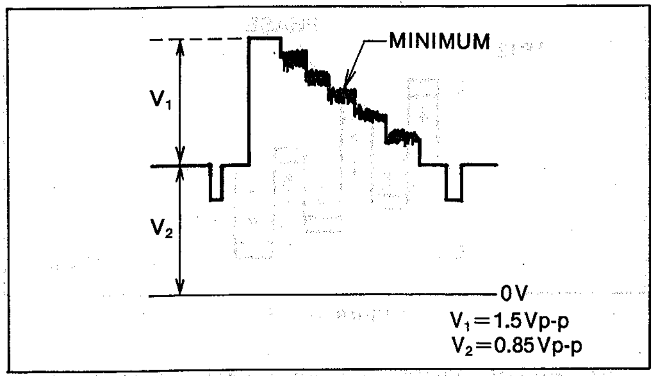


Figure 3-25.

3-26. FREQUENCY CHARACTERISTIC ADJUSTMENT (1)

T P	ADJ.	MODE	INPUT
TP 4 (3R)	L 8 (2P)	Y/C	SWEEP
TAPE	M. EQ.	SPEC.	
-----	SCOPE	5 MHZ = +/- 0.5dB	

1. Supply the sweep signal as shown in Figure to the Y/C inputs.
2. Adjust L8 so that the level at 5MHz is +/-0.5dB as shown in Figure 3-24.
3. Confirm that the K-FACTOR is less than 1%. (Input PULSE and BAR)

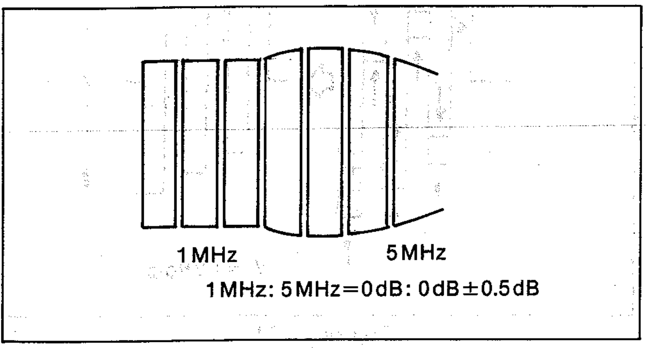


Figure 3-26.

3-27. FREQUENCY CHARACTERISTIC ADJUSTMENT (2)

T P	ADJ.	MODE	INPUT
TP 6 (10 A)	L 70 (12 A)	COMPOSITE	SWEEP
TAPE	M. EQ.	SPEC.	
-----	SCOPE	5 MHZ = +/- 0.2dB	

1. Adjust L70 so that the level at 5MHz is -0.2dB as shown in Figure 3-27.
2. Confirm, the K-FACTOR is less than 1%.

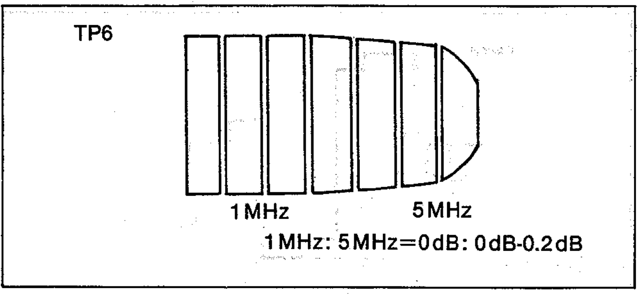


Figure 3-27.

3-28. D/A CONVERTER ADJUSTMENT (1)

T P	ADJ.	MODE	INPUT
TP26 (23J)	VR55 (24U)	COMPOSITE	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	H BLANKING LEVEL = PEDESTAL LEVEL	

1. Adjust VR55 so that the DC level at the H blanking and pedestal on the R-Y signal become the same levels.

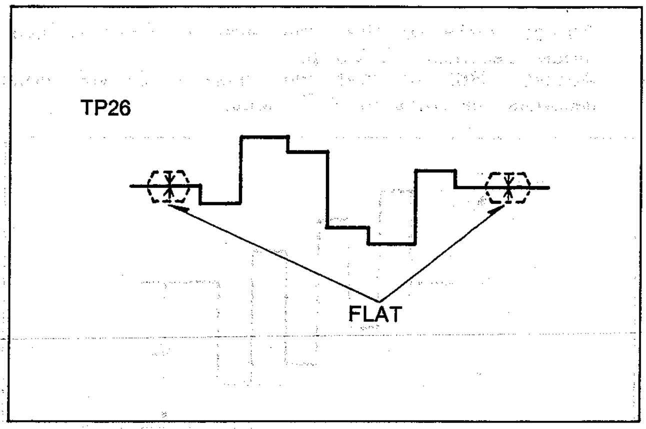


Figure 3-28.

3-29. D/A CONVERTER ADJUSTMENT (2)

T P	ADJ.	MODE	INPUT
TP27 (23L)	VR56 (24V)	COMPOSITE	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	H BLANKING LEVEL = PEDESTAL LEVEL	

1. Adjust VR56 so that the DC level at the H blanking and pedestal on the B-Y signal become the same levels.

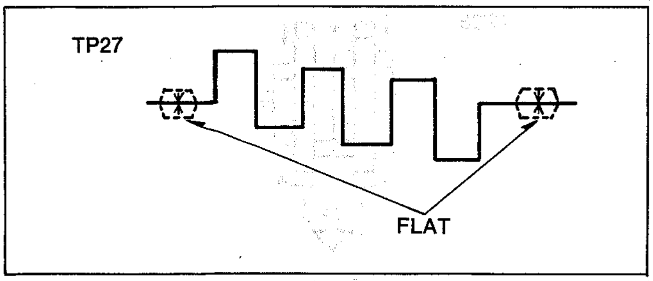


Figure 3-29.

3-30. D/A CONVERTER ADJUSTMNET (3)

T P	ADJ.	MODE	INPUT
TP26 (23J) TP27 (23L)	VR4 (25T) VR5 (22T)	COMPOSITE	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	A = B C = D	

1. Connect the scope to TP26.
2. Adjust VC4 so that the level A and B become the same levels as shown in Figure 3-30-1.

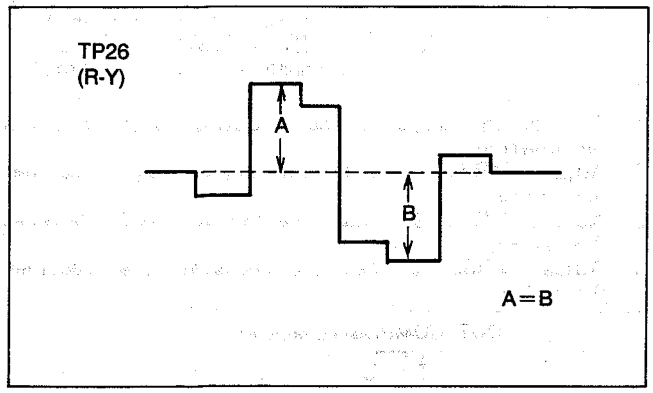


Figure 3-30-1.

3. Connect the scope to TP27.
4. Adjust VC5 so that the level C and D become the same levels as shown in Figure 3-30-2.

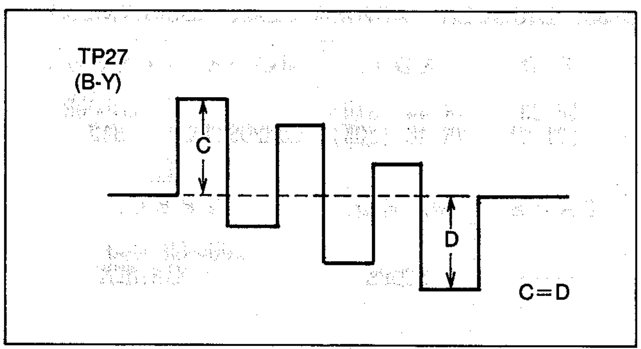


Figure 3-30-2.

3-31. SC DUTY ADJUSTMENT

T P	ADJ.	MODE	INPUT
JP7 B (17S)	VR42 (19S)	COMPOSITE	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	DUTY 50% : 50%	

1. Connect the scope to JP7 B and adjust VR42 so that the duty 50% : 50%.

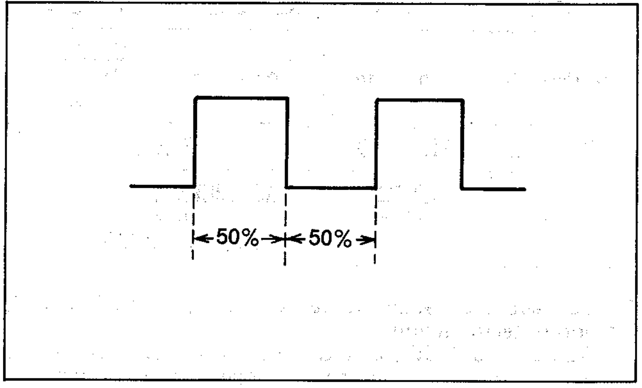


Figure 3-31.

3-32. ENCODER INPUTLEVEL ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP46 (19 H)	VR 34 (17 H)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	SUB-CARRIERLEVEL = 0.1V P-P	

1. Adjust VR34 so that the subcarrier level at TP46 becomes 0.1Vp-p.

3–33. ENCODER CARRIER LEAK ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 23 (21 C)	VR 44 (21H) VR 46 (20K)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	CARRIER LEAK = MINIMUM	

1. Adjust VR44 and VR46 so that the carrier leak on the encord chroma signal becomes minimum as shown in Figure 3–33.

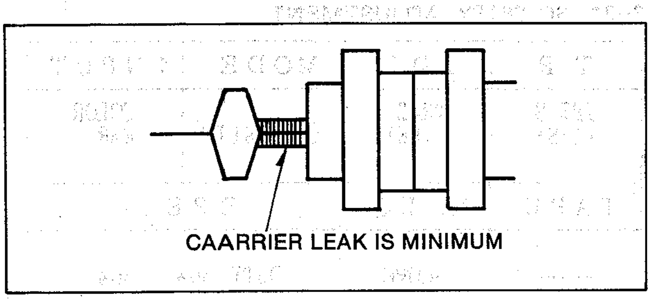


Figure 3–33.

3–34. R–Y ANGLES ADJUSTMENT

T P	ADJ.	MODE	INPUT
VIDEO OUT	VC6 (18H)	COMPOSITE	COLOR BAR (B-Y OFF)
TAPE	**M. EQ.**	**SPEC.**	
-----	VECTOR SCOPE	AS SHOWN IN FIGURE 3-32. SEE FIG. BELOW	

1. Connect the vector scope to VIDEO 1 OUT with 75 ohom termination.
2. Adjust the VC6 so that the two line become the one line on vector scope as shown in Figure 3–34.

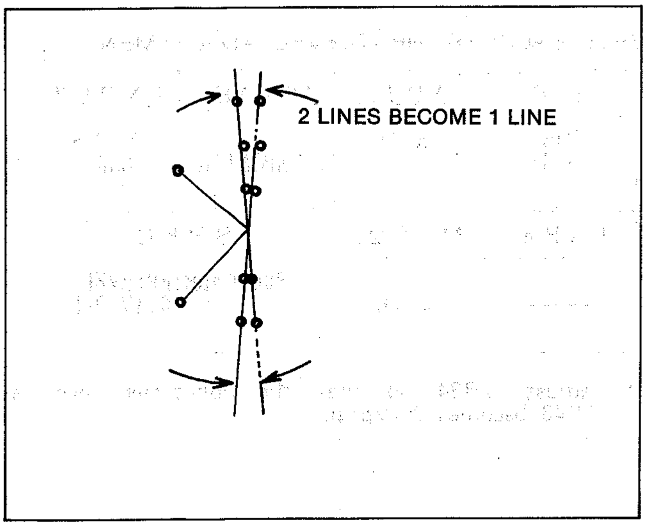


Figure 3–34.

3–35. ENCODER CHROMINANCE QUAD ADJUSTMENT

T P	ADJ.	MODE	INPUT
TP 23 (21 D)	L 39 (18 K)	COMPOSITE	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	CHROMA SIGNAL = NO DOUBLE IMAGE	

1. Adjust L39 so that the waveform at TP23 which is seen double, becomes one waveform.

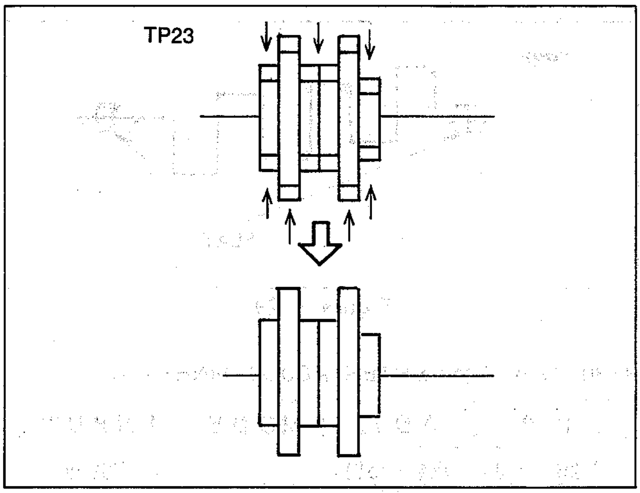


Figure 3–35.

3–36. COMPONENT Y SIGNAL ADJUSTMENT

T P	ADJ.	MODE	INPUT
Y OUT (W/75OHM)	VR61 (21L) VR49 (21R) VR52 (23F)	COMPOSITE	COLOR BAR
TAPE	**M. EQ.**	**SPEC.**	
-----	SCOPE	LEVEL = 0.7Vp-p (VR61) SYNC = 0.3Vp-p)VR49) PEDESTAL = 0V DC (VR52)	

1. Connect the scope to the Y output with 75 ohom termination.
2. Adjust VR61 so that the signal level becomes 0.7 Vp–p.
3. Adjust VR49 so that the SYNC level becomes 0.3 Vp–p.
4. Adjust VR52 so that the pedestal level becomes 0V DC.

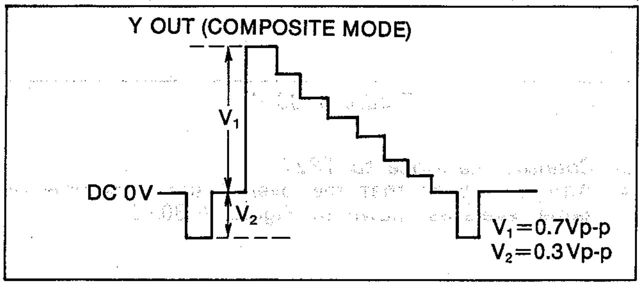


Figure 3–36–1.

T P	ADJ.	MODE	INPUT
Y OUT (W/75OHM)	VR13 (4B)	Y/C	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	Y LEVEL = 0.7Vp-p	

5. Set the Y/C mode and adjust VR13 so that Y level 0.7 Vp-p.

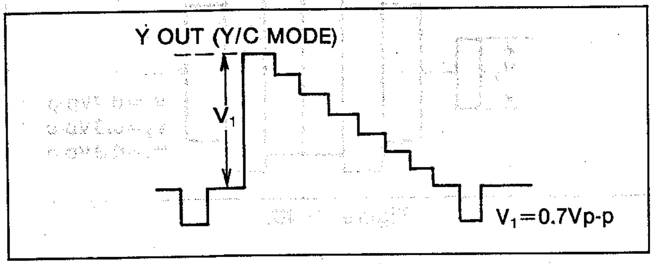


Figure 3-36-2.

3-37. COMPONENT CHROMA SIGNAL ADJUSTMENT (1)

T P	ADJ.	MODE	INPUT
PR OUTPUT (W/75 OHM)	VR 58 (25M) VR 59 (26N) VR 60 (26N)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	SEE BELOW	

1. Connect the scope to the PR OUT with 75 ohom termination.
2. Set JP15 "ON".
3. Adjust VR60 so that the SYNC level becomes 0.6 Vp-p.
4. Adjust VR58 so that the CHROMA signal level is 0.525 Vp-p and adjust VR59 so that the DC level at the pedestal is 0V DC.

Note : Adjust VR58 and 59 alternately.
Reset JP15 is "OFF", after the adjustment.

5. Readjustment VR59 so that the DC level at the pedestal is 0V DC.

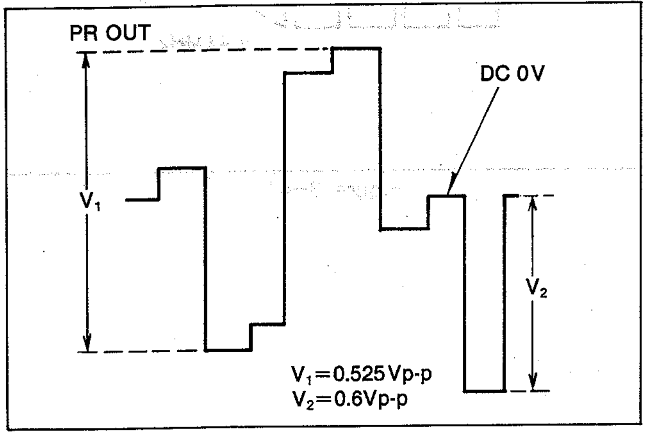


Figure 3-37.

3-38. COMPONENT CHROMA SIGNAL ADJUSTMENT (2)

T P	ADJ.	MODE	INPUT
PB OUTPUT (W/75 OHM)	VR 53 (23N) VR 54 (23P)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	LEVEL = 0.525Vp-p PEDESTAL = 0V DC	

1. Connect the scope to the PB OUT with 75 ohom termination.
2. Adjust VR53 so that the CHROMA signal level is 0.525 Vp-p.
3. Adjust VR54 so that the DC level at the pedestal is 0V DC.

Note : Adjust VR53 and VR54 alternately.

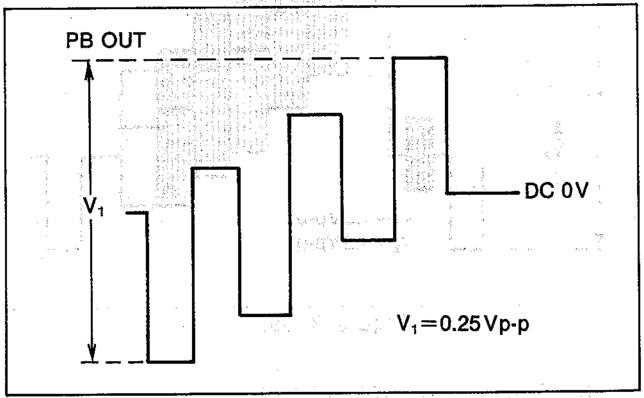


Figure 3-38.

3-39. COMPOSITE VIDEO OUTPUT ADJUSTMENT

T P	ADJ.	MODE	INPUT
VIDEO OUT (W/75OHM)	VR50 (23C) VR51 (23D) VR43 (19F) VR48 (25E)	COMPOSITE AND Y/C	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	SEE BELOW	

1. Connect the scope to VIDEO 1 OUT with 75 ohom termination.
2. Adjust VR50 so that the levels white portion and yellow portion become the same levels.
3. Adjust VR51 so that the level from SYNC tip to white portion becomes 1 Vp-p.
4. Adjust VR43 so that the burst level becomes 0.3 Vp-p.
5. Adjust VR48 so that the DC level at pedestal (scope is DC mode) becomes the same level at pedestal (scope is AC mode).

T P	ADJ.	MODE	INPUT
VIDEO OUT (W/75OHM)	VR35 (19J) L39 (18K)	COMPOSITE AND Y/C	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	VECTOR SCOPE	SEE BELOW	

6. Connect the vector scope to VIDEO 1 OUT and adjust L39, VR35 so that RIGHT angle and U level become the regulation angle and level.
7. Conform the above-mention in Y/C mode.

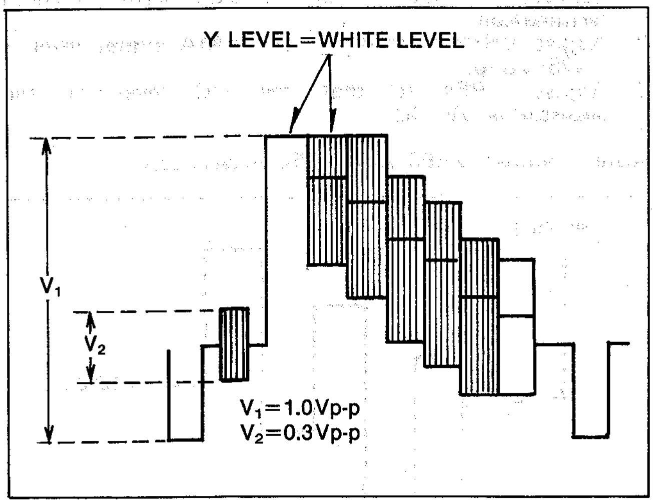


Figure 3-39.

3- 40. S AND Y/C 443 ADJUSTMENT

T P	ADJ.	MODE	INPUT
S OUT	VR57 (24B) VR21 (20B)	Y/C	COLOR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE AND VECTIR SCOPE	LEVEL AND PHASE ARE SAME IN Y/C AND BYPASS MODES	

1. Connect the scope to the S OUT with 75 ohom termination.
2. Conform the luminance signal level is the same level at BYPASS mode.

Note : When S8 and S9 down to rear panel side, the BYPASS signal appears at S OUT, and down to front panel side, the BYPASS signal appears at Y/C 443 OUT.

3. Adjust VR57 so that the chroma signal level becomes equal at BYPASS mode.
4. Adjust VR21 the chroma signal phase becomes equal the composite video signal phase.

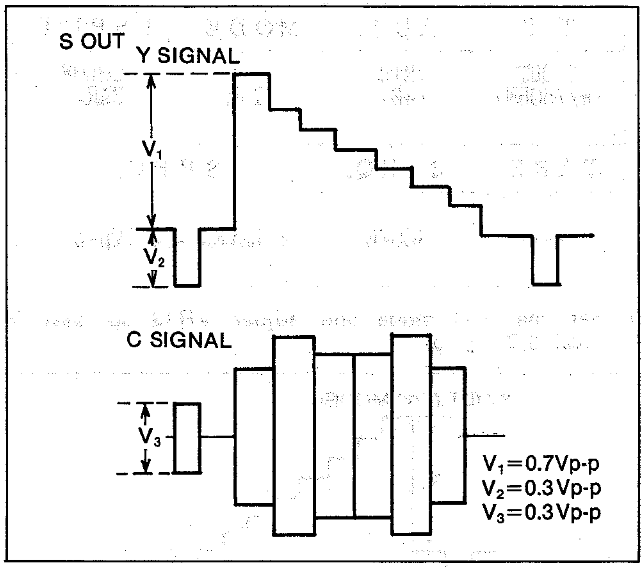


Figure 3-40.

3-41. SC TRAP ADJUSTMENT (1)

T P	ADJ.	MODE	INPUT
VIDEO 1 OUT	JP 5 ON (23 B) VC 2 (23 B)	COMPOSITE B/W	SWEEP
TAPE	M. EQ.	SPEC.	
-----	SCOPE	TRAP FREQUENCY = 4.43MHz	

1. Set the B/W mode and connect the scope to VIDEO 1 OUT with 75 ohom termination.
2. Adjust VC2 so that the trap frequency becomes 4.43 MHz.

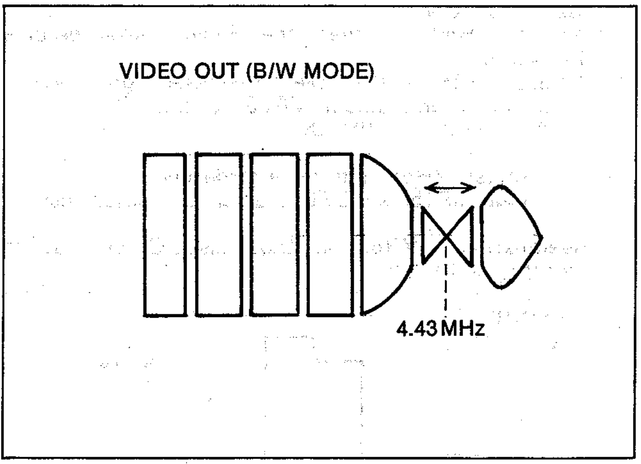


Figure 3-41.

3–42. SC TRAP ADJUSTMENT (2)

T P	A D J.	M O D E	I N P U T
Y OUT	JP 2 T (3A) VC 1 (3C)	COMPOSITE B/W	SWEEP
T A P E	**M. E Q.**	**S P E C.**	
-----	SCOPE	TRAP FREQUENCY = 4.43MHz	

1. Set the JP2 "T".
2. Connect the scope to Y OUT with 75 ohom termination, and adjust VC1 so that the trap frequency becomes 4.43 MHz.
3. Reset the JP2 "N".

3–43. K FACTOR ADJUSTMENT

T P	A D J.	M O D E	I N P U T
VIDEO OUT (W/75OHM)	VR66 (23E)	COMPOSITE	PULSE & BAR
T A P E	**M. E Q.**	**S P E C.**	
-----	SCOPE	K FACTOR WITHIN 2%	

1. Connect the scope to VIDEO 1 OUT with 75 ohom termination.
2. Adjust VR66 so that the K FACTOR becomes within 2%.

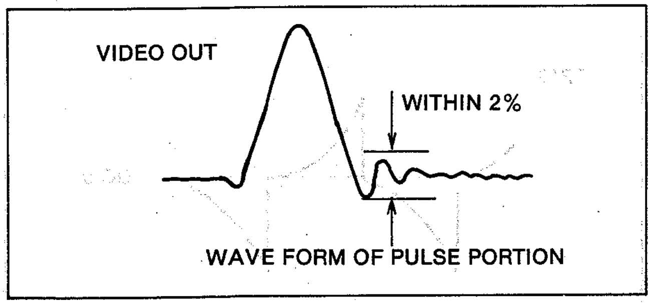


Figure 3–43.

4. DIGITAL BOARD SECTION ADJUSTMENT PROCEDURES

4–1. SGSC PULSE ADJUSTMENT

T P	A D J.	M O D E	I N P U T
TP 20 (12 B)	VR 5 (12A)	COMPOSITE	COLOUR BAR
T A P E	**M. E Q.**	**S P E C.**	
-----	SCOPE	DUTY = 50% : 50%	

1. Adjust VR5 so that the duty of the pulse becomes 50 pct / 50 pct.

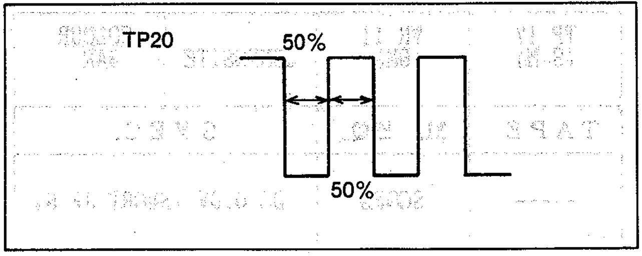


Figure 4–1.

4–2. GENLOCK ADJUSTMENT

T P	A D J.	M O D E	I N P U T
TP26 (18N) TP27 (10C)	VR 7 (10D)	COMPOSITE	COLOUR BAR
T A P E	**M. E Q.**	**S P E C.**	
-----	SCOPE	BURST RISING - TTL DROP = 0.6μS	

1. Connect the scope CH1 to TP26 and CH2 to TP27.
2. Adjust VR7 so that "T" (starting of burst flag / folling edge of pulse) is 0.6 Usec as shown in Figure 4–2.

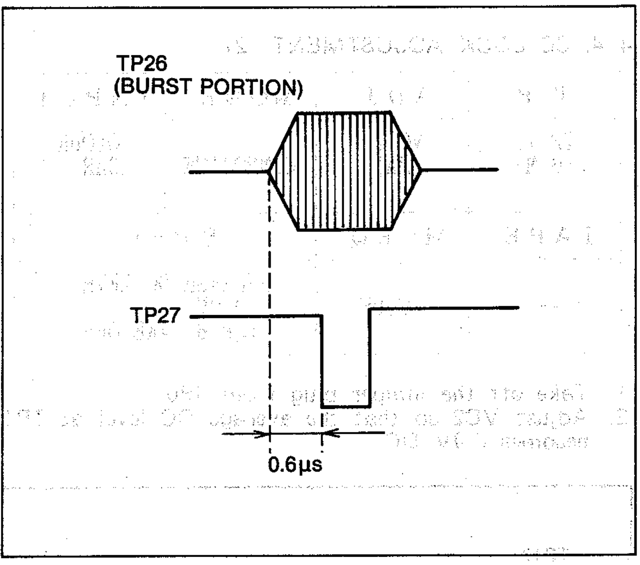


Figure 4–2.

4–3. SC LOCK ADJUSTMENT (1)

TP	ADJ.	MODE	INPUT
TP 17 (6 M)	VR 11 (6M)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	DC 0.0V (SHORT JP 6)	

1. Set a jumper plug to JP6.
2. Adjust VR11 so that the voltage of TP17 becomes 0.0V DC.

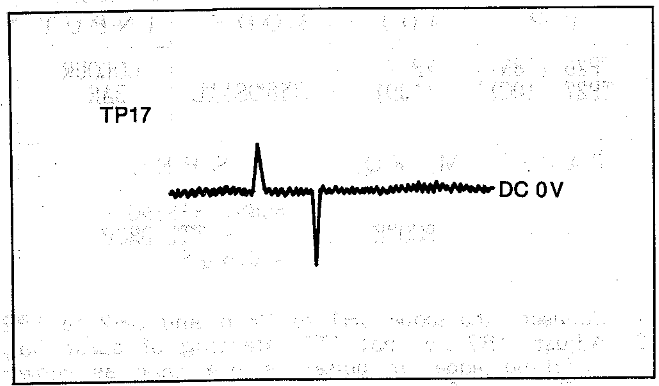


Figure 4–3.

4–4. SC LOCK ADJUSTMENT (2)

TP	ADJ.	MODE	INPUT
TP 17 (6 M)	VC 2 (2A)	COMPOSITE	COLOUR BAR
TAPE	M. EQ.	SPEC.	
-----	SCOPE	AVERAGE DC LEVEL ≒ 0.0V (JP 6 TAKE OFF)	

1. Take off the jumper plug from JP6.
2. Adjust VC2 so that the average DC level at TP17 becomes 0.0V DC.

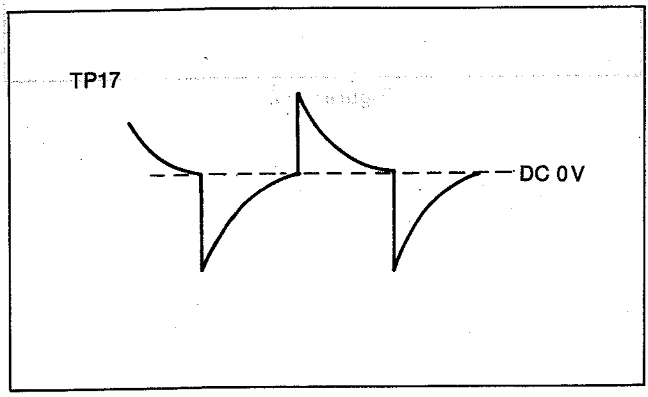


Figure 4–4.

4–5. INTERNAL FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VC 1 (1B)	INTERNAL	(GENLOCK OFF)
TAPE	M. EQ.	SPEC.	
-----	VECTOR SCOPE	BURST ROTATION MINIMUM	

1. Cut off the GENLOCK input signal.
2. Set the unite is INTERNAL mode.
3. Connect the vector scope to the VIDEO OUT and adjust VC1 so that the burst rotation becomes minimum.

4–6. SC LOCK READJUSTMENT (3)

TP	ADJ.	MODE	INPUT
TP 17 (6 M)	VC 2 (2A)	COMPOSITE	COLOUR BAR (GENLOCK IN)
TAPE	M. EQ.	SPEC.	
-----	SCOPE	AVERAGE DC LEVEL ≒ 0.0V	

1. Connect the GENLOCK signal to the unite.
2. Adjust VC2 so that the average of the DC level at TP17 becomes 0.0V DC.

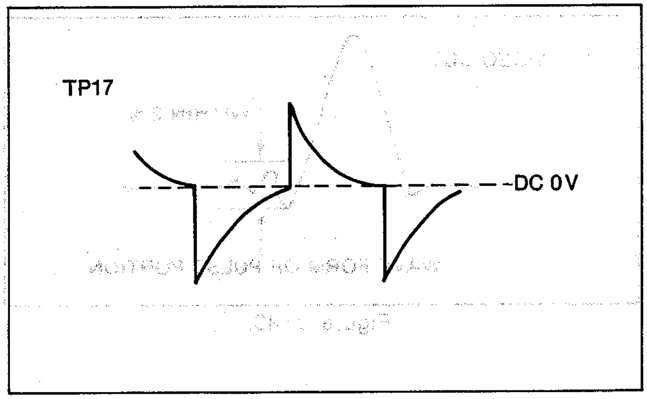
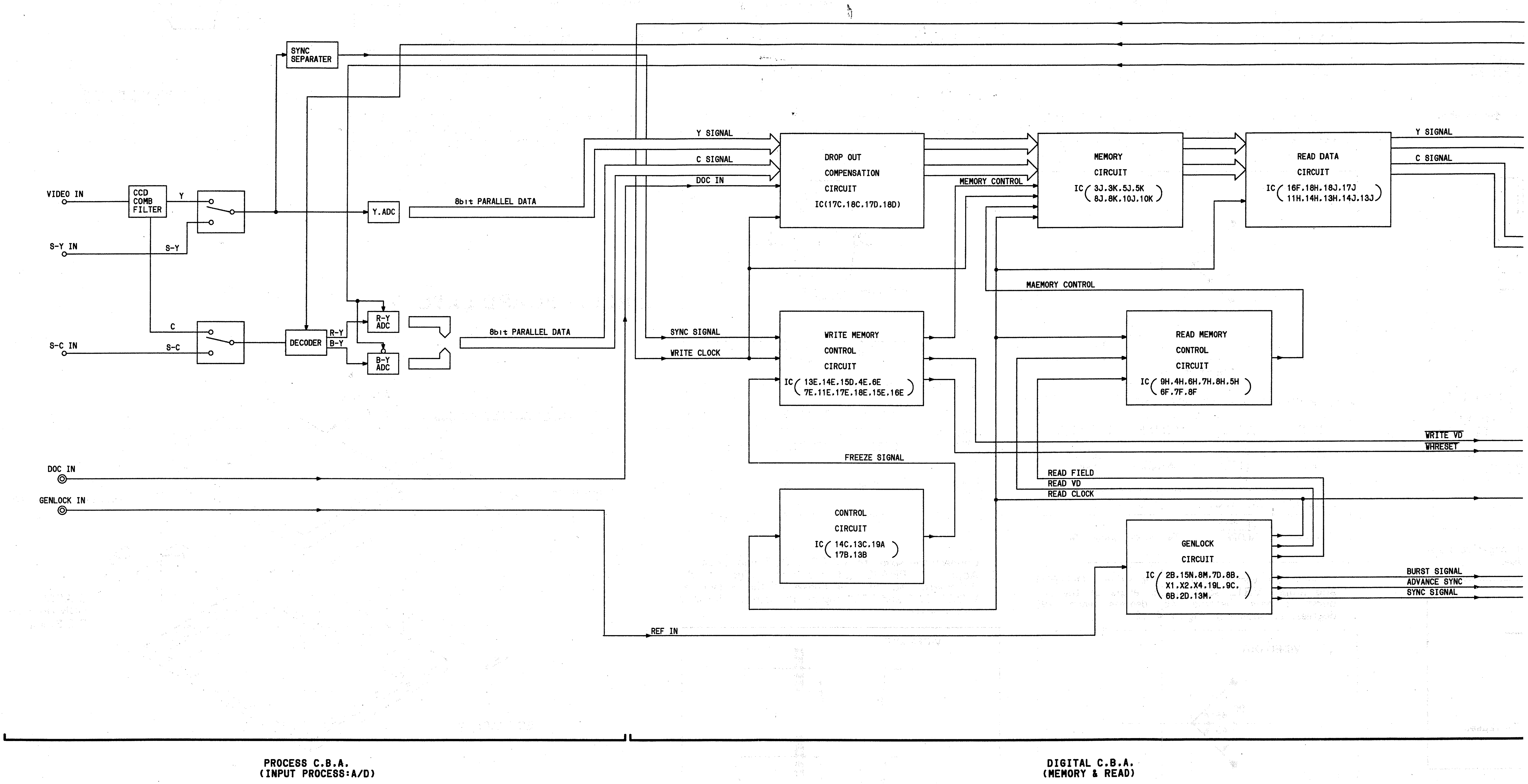
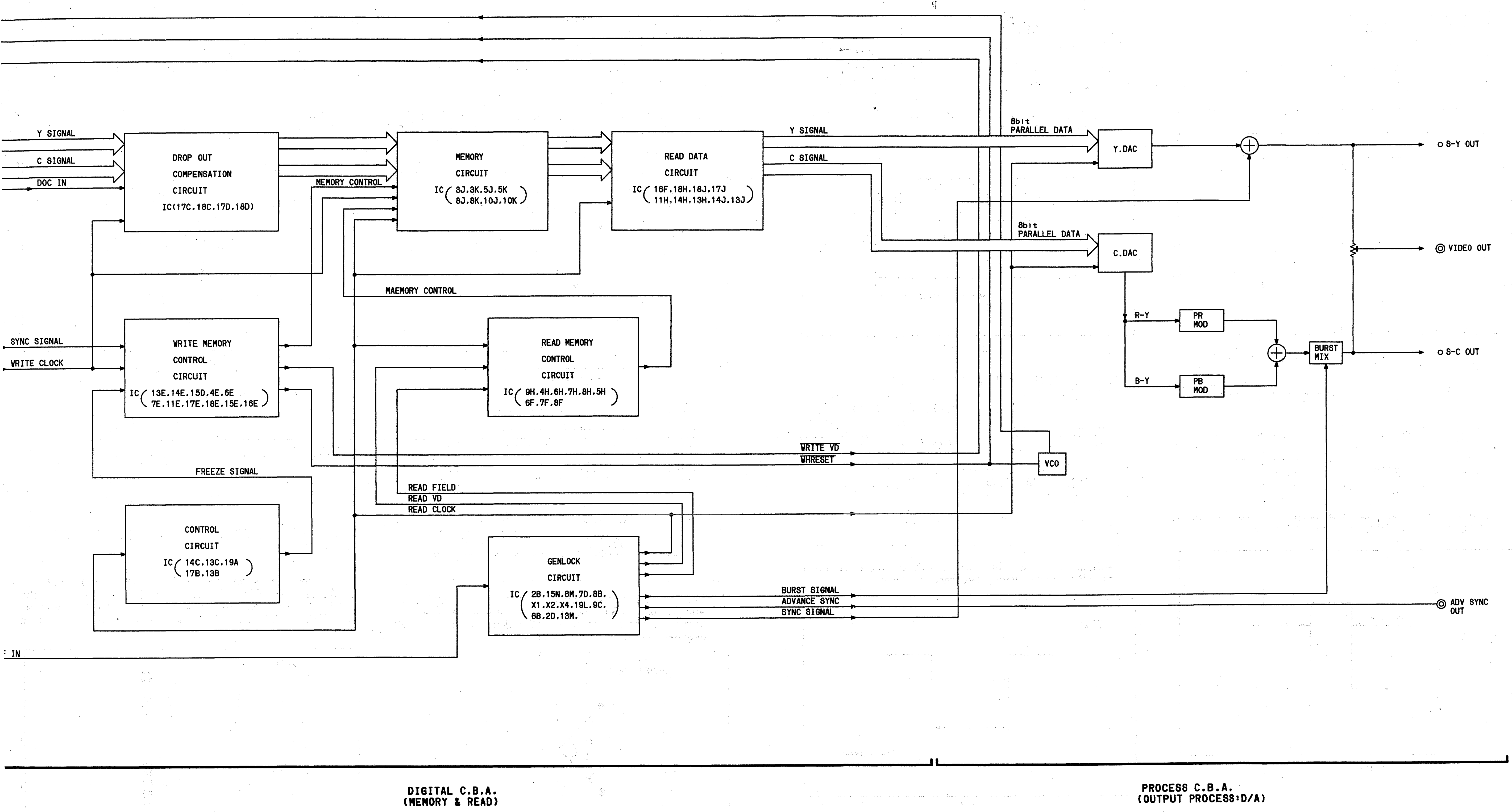


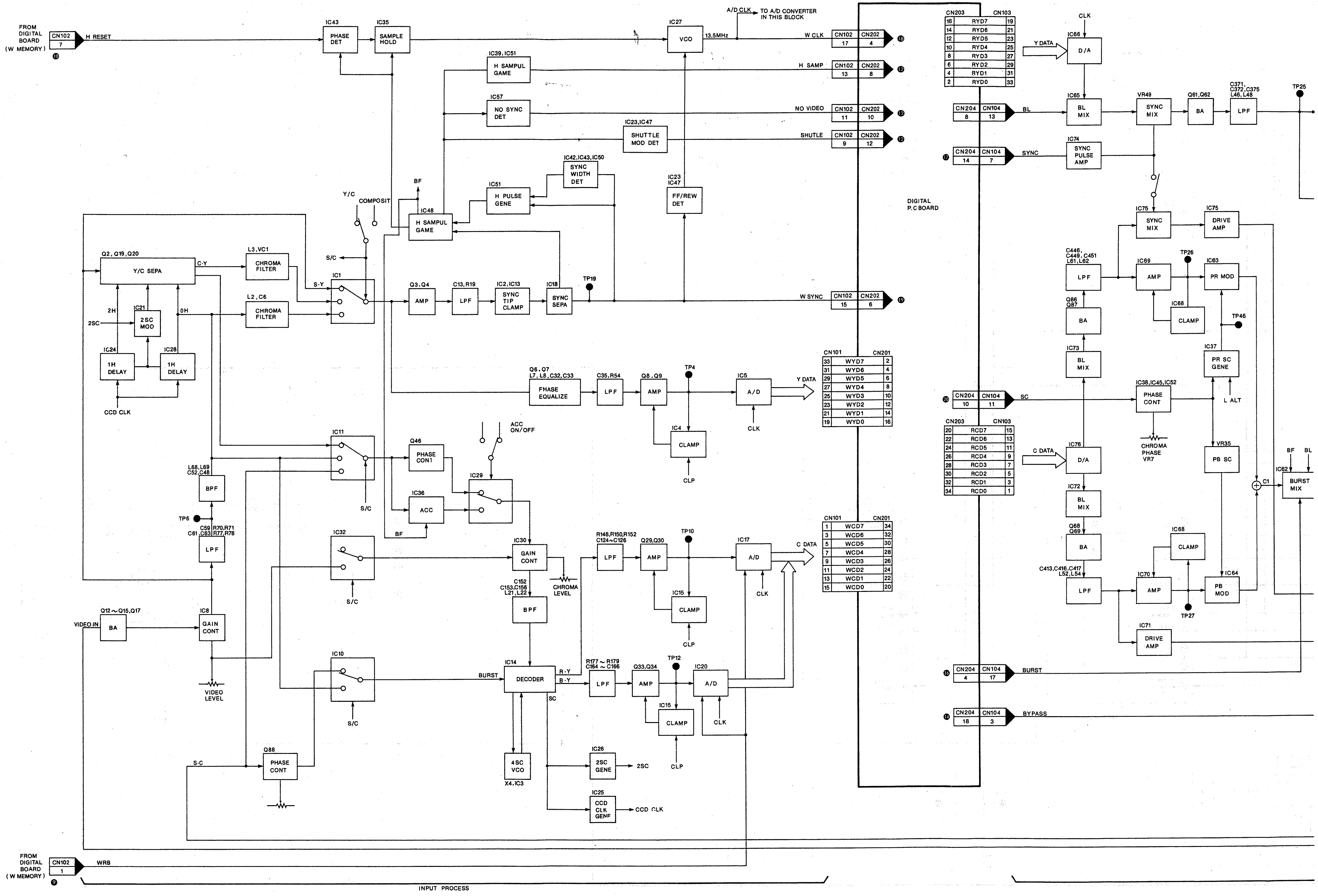
Figure 4–6.

OVERALL BLOCK DIAGRAM


SYNC SEPARATER
VIDEO IN
CCD COMB FILTER
Y
S-Y IN
S-Y
C
S-C IN
S-C
Y.ADC
DECODER
R-Y
B-Y
R-Y ADC
B-Y ADC
8bit PARALLEL DATA
8bit PARALLEL DATA
Y SIGNAL
C SIGNAL
DOC IN
DROP OUT COMPENSATION CIRCUIT IC(17C.18C.17D.18D)
MEMORY CONTROL
MEMORY CIRCUIT IC(3J.3K.5J.5K 8J.8K.10J.10K)
READ DATA CIRCUIT IC(16F.18H.18J.17J 11H.14H.13H.14J.13J)
Y SIGNAL
C SIGNAL
MAEMORY CONTROL
SYNC SIGNAL
WRITE CLOCK
WRITE MEMORY CONTROL CIRCUIT IC(13E.14E.15D.4E.6E 7E.11E.17E.18E.15E.16E)
READ MEMORY CONTROL CIRCUIT IC(9H.4H.6H.7H.8H.5H 6F.7F.8F)
WRITE VD
WHRESET
FREEZE SIGNAL
READ FIELD
READ VD
READ CLOCK
DOC IN
GENLOCK IN
CONTROL CIRCUIT IC(14C.13C.19A 17B.13B)
GENLOCK CIRCUIT IC(2B.15N.8M.7D.8B. X1.X2.X4.19L.9C. 6B.2D.13M.)
BURST SIGNAL
ADVANCE SYNC
SYNC SIGNAL
REF IN
PROCESS C.B.A. (INPUT PROCESS:A/D)
DIGITAL C.B.A. (MEMORY & READ)


Y SIGNAL
C SIGNAL
DOC IN
DROP OUT
COMPENSATION
CIRCUIT
IC(17C.18C.17D.18D)
MEMORY CONTROL
MEMORY
CIRCUIT
IC(3J.3K.5J.5K
8J.8K.10J.10K)
READ DATA
CIRCUIT
IC(16F.18H.18J.17J
11H.14H.13H.14J.13J)
Y SIGNAL
C SIGNAL
8bit
PARALLEL DATA
Y.DAC
8bit
PARALLEL DATA
C.DAC
S-Y OUT
VIDEO OUT
S-C OUT
R-Y
B-Y
PR
MOD
PB
MOD
BURST
MIX
MAEMORY CONTROL
SYNC SIGNAL
WRITE CLOCK
WRITE MEMORY
CONTROL
CIRCUIT
IC(13E.14E.15D.4E.6E
7E.11E.17E.18E.15E.16E)
READ MEMORY
CONTROL
CIRCUIT
IC(9H.4H.6H.7H.8H.5H
6F.7F.8F)
WRITE VD
WHRESET
VCO
FREEZE SIGNAL
READ FIELD
READ VD
READ CLOCK
CONTROL
CIRCUIT
IC(14C.13C.19A
17B.13B)
GENLOCK
CIRCUIT
IC(2B.15N.8M.7D.8B.
X1.X2.X4.19L.9C.
6B.2D.13M.)
BURST SIGNAL
ADVANCE SYNC
SYNC SIGNAL
ADV SYNC
OUT
IN
DIGITAL C.B.A.
(MEMORY & READ)
PROCESS C.B.A.
(OUTPUT PROCESS:D/A)

PROCESS BLOCK DIAGRAM

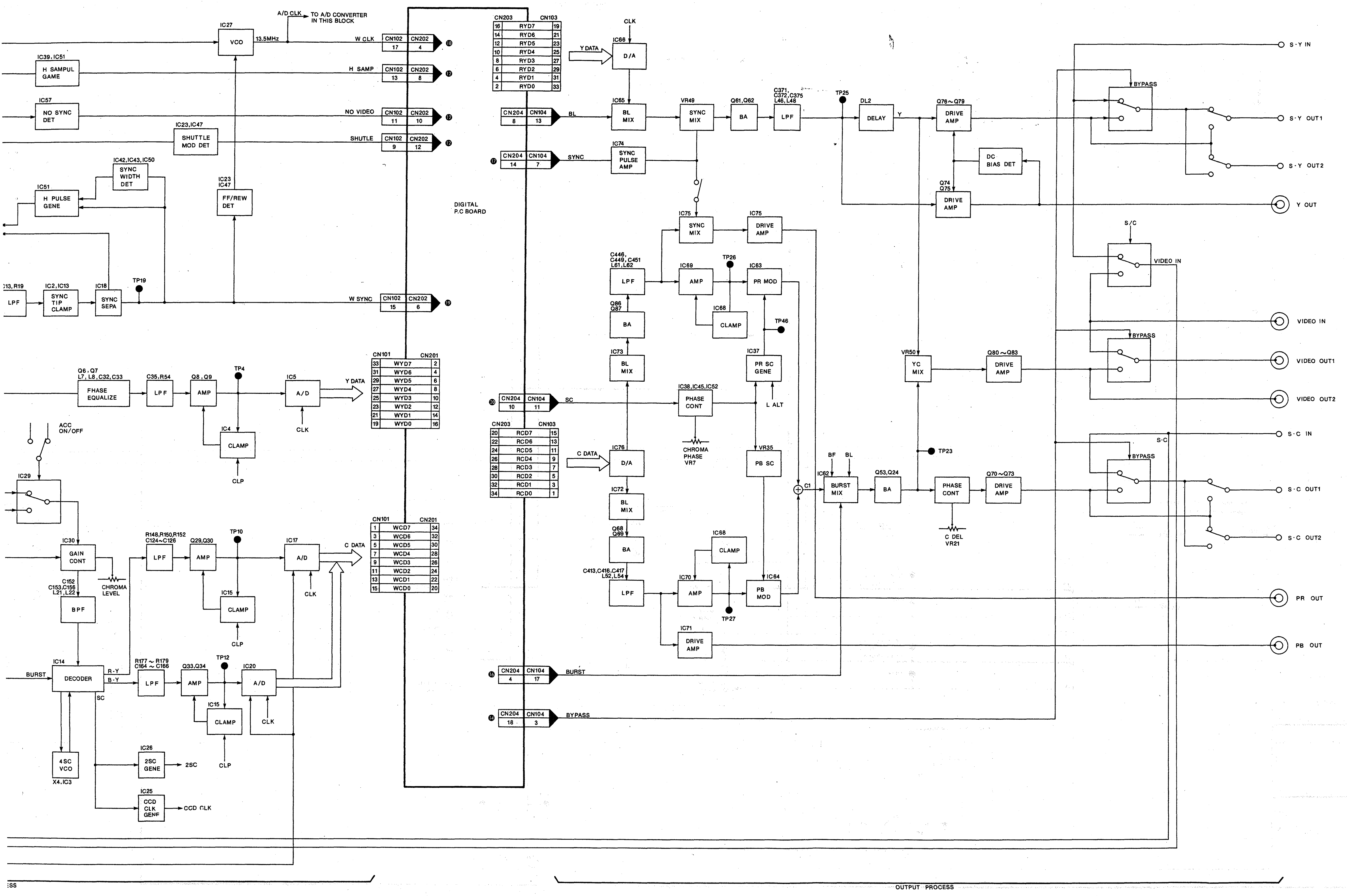

FROM DIGITAL BOARD (W MEMORY)
CN102 7
H RESET
⑩
IC43 PHASE DET
IC35 SAMPLE HOLD
A/D CLK TO A/D CONVERTER IN THIS BLOCK
IC27 VCO
13.5MHz
W CLK
CN102 17 CN202 4
⑱
IC39, IC51 H SAMPUL GAME
H SAMP
CN102 13 CN202 8
IC57 NO SYNC DET
NO VIDEO
CN102 11 CN202 10
IC23, IC47 SHUTTLE MOD DET
SHUTLE
CN102 9 CN202 12
IC42, IC43, IC50 SYNC WIDTH DET
IC51 H PULSE GENE
IC23 IC47 FF/REW DET
BF
Y/C
COMPOSIT
IC48 H SAMPUL GAME
S/C
Q2, Q19, Q20 Y/C SEPA
C-Y
L3, VC1 CHROMA FILTER
L2, C6 CHROMA FILTER
S-Y
IC1
Q3, Q4 AMP
C13, R19 LPF
IC2, IC13 SYNC TIP CLAMP
IC18 SYNC SEPA
TP19
W SYNC
CN102 15 CN202 6
⑲
2H
IC21 2SC MOD
0H
2SC
IC24 1H DELAY
IC28 1H DELAY
CCD CLK
Q6, Q7 L7, L8, C32, C33 FHASE EQUALIZE
C35, R54 LPF
Q8, Q9 AMP
TP4
IC5 A/D
Y DATA
IC4 CLAMP
CLK
CLP
ACC ON/OFF
IC11
Q46 PHASE CONT
IC29
IC36 ACC
S/C
BF
L68, L69 C52, C48 BPF
TP5
C59 R70, R71 C61 C63 R77, R78 LPF
IC32
S/C
IC30 GAIN CONT
CHROMA LEVEL
C152 C153, C156 L21, L22 BPF
R148, R150, R152 C124∼C126 LPF
Q29, Q30 AMP
TP10
IC17 A/D
C DATA
IC15 CLAMP
CLK
CLP
Q12∼Q15, Q17 BA
VIDEO IN
IC8 GAIN CONT
VIDEO LEVEL
IC10
S/C
BURST
IC14 DECODER
R-Y
B-Y
SC
R177∼R179 C164∼C166 LPF
Q33, Q34 AMP
TP12
IC20 A/D
IC15 CLAMP
CLK
CLP
S-C
Q88 PHASE CONT
4SC VCO X4, IC3
IC26 2SC GENE
2SC
IC25 CCD CLK GENE
CCD CLK
DIGITAL P.C BOARD
FROM DIGITAL BOARD (W MEMORY)
CN102 1
WRB
⑨
INPUT PROCESS
CLK
Y DATA
IC66 D/A
CN204 8 CN104 13
BL
IC65 BL MIX
VR49 SYNC MIX
Q61, Q62 BA
C371, C372, C375 L46, L48 LPF
TP25
⑰
CN204 14 CN104 7
SYNC
IC74 SYNC PULSE AMP
IC75 SYNC MIX
IC75 DRIVE AMP
C446, C449, C451 L61, L62 LPF
TP26
IC69 AMP
IC63 PR MOD
IC68 CLAMP
Q86 Q87 BA
TP46
IC73 BL MIX
IC37 PR SC GENE
⑳
CN204 10 CN104 11
SC
IC38, IC45, IC52 PHASE CONT
L ALT
CHROMA PHASE VR7
C DATA
IC76 D/A
VR35 PB SC
BF
BL
C1
IC62 BURST MIX
IC72 BL MIX
Q68 Q69 BA
IC68 CLAMP
C413, C416, C417 L52, L54 LPF
IC70 AMP
IC64 PB MOD
TP27
IC71 DRIVE AMP
⑮
CN204 4 CN104 17
BURST
⑯
CN204 18 CN104 3
BYPASS

CN203		CN103
16	RYD7	19
14	RYD6	21
12	RYD5	23
10	RYD4	25
8	RYD3	27
6	RYD2	29
4	RYD1	31
2	RYD0	33

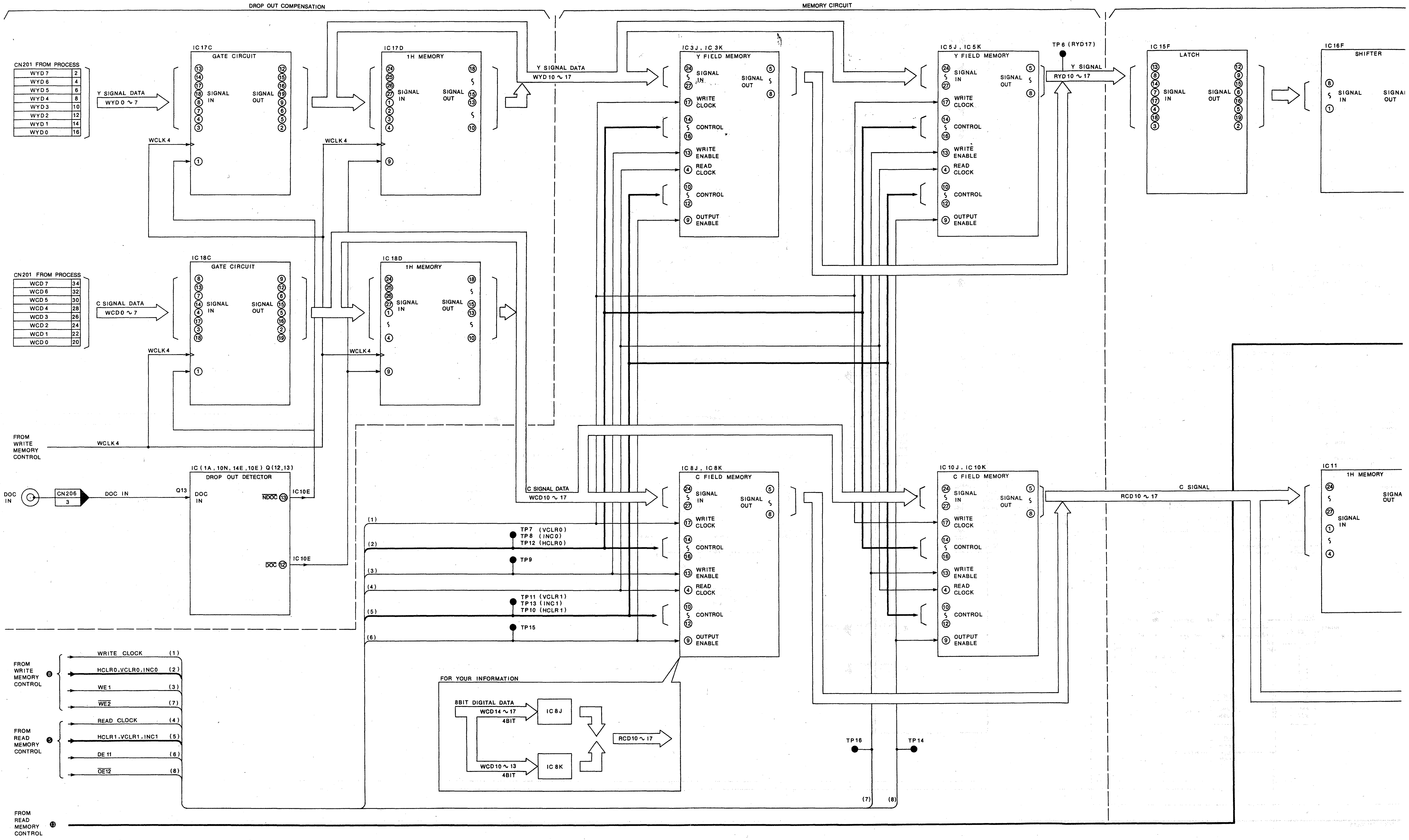
CN101		CN201
33	WYD7	2
31	WYD6	4
29	WYD5	6
27	WYD4	8
25	WYD3	10
23	WYD2	12
21	WYD1	14
19	WYD0	16

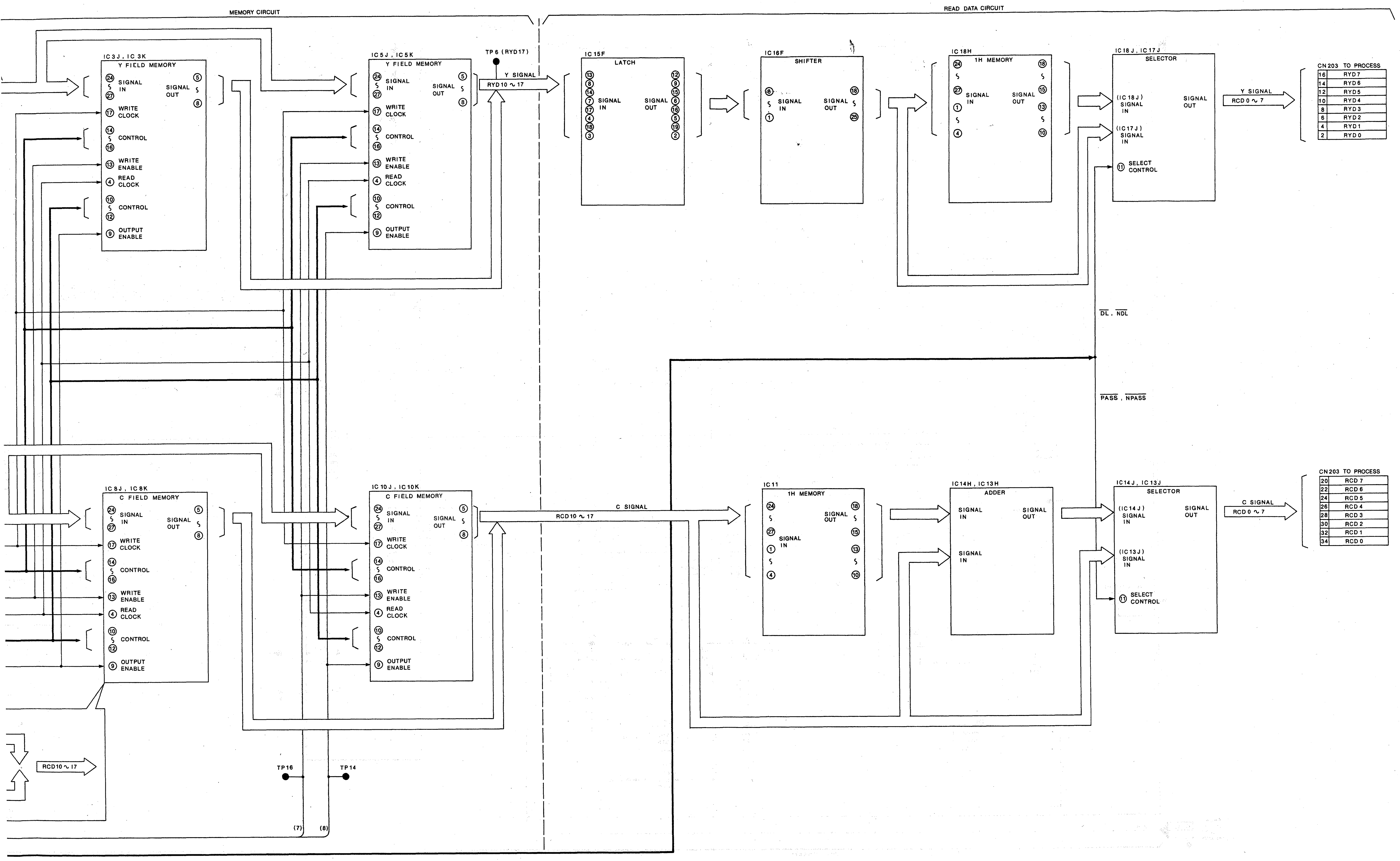
CN203		CN103
20	RCD7	15
22	RCD6	13
24	RCD5	11
26	RCD4	9
28	RCD3	7
30	RCD2	5
32	RCD1	3
34	RCD0	1

CN101		CN201
1	WCD7	34
3	WCD6	32
5	WCD5	30
7	WCD4	28
9	WCD3	26
11	WCD2	24
13	WCD1	22
15	WCD0	20

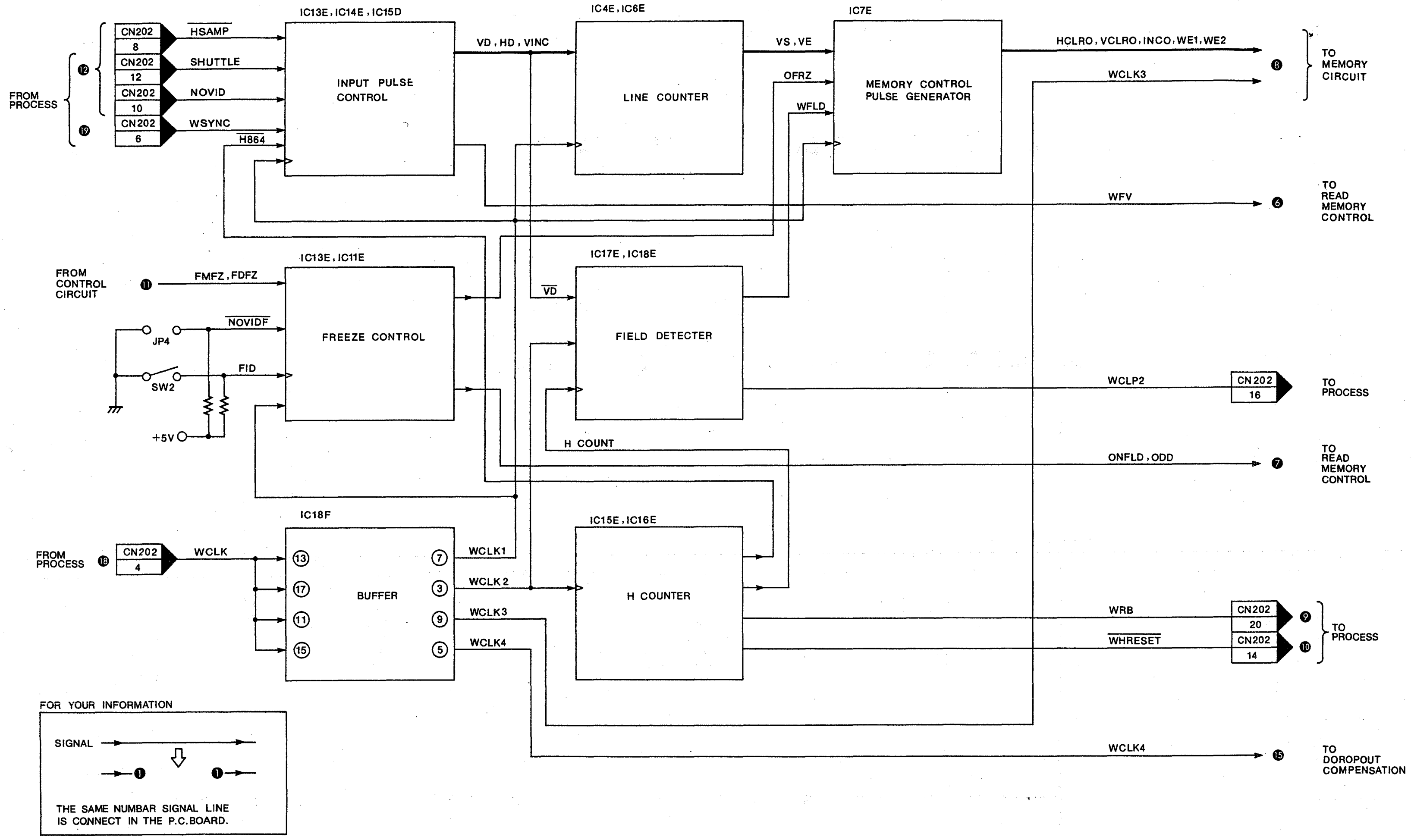

A/D CLK
TO A/D CONVERTER IN THIS BLOCK
IC27
VCO
13.5MHz
W CLK
CN102
CN202
IC39, IC51
H SAMPUL GAME
H SAMP
IC57
NO SYNC DET
NO VIDEO
IC23, IC47
SHUTTLE MOD DET
SHUTLE
IC42, IC43, IC50
SYNC WIDTH DET
IC51
H PULSE GENE
IC23
IC47
FF/REW DET
C13, R19
LPF
IC2, IC13
SYNC TIP CLAMP
IC18
SYNC SEPA
TP19
W SYNC
DIGITAL P.C BOARD
CN203
CN103
RYD7
RYD6
RYD5
RYD4
RYD3
RYD2
RYD1
RYD0
CN101
CN201
WYD7
WYD6
WYD5
WYD4
WYD3
WYD2
WYD1
WYD0
Y DATA
Q6, Q7
L7, L8, C32, C33
FHASE EQUALIZE
C35, R54
LPF
Q8, Q9
AMP
TP4
IC5
A/D
IC4
CLAMP
CLK
CLP
ACC ON/OFF
IC29
IC30
GAIN CONT
CHROMA LEVEL
C152
C153, C156
L21, L22
BPF
R148, R150, R152
C124~C126
LPF
Q29, Q30
AMP
TP10
IC17
A/D
C DATA
IC15
CLAMP
CN101
CN201
WCD7
WCD6
WCD5
WCD4
WCD3
WCD2
WCD1
WCD0
IC14
BURST
DECODER
R-Y
B-Y
SC
R177~R179
C164~C166
LPF
Q33, Q34
AMP
TP12
IC20
A/D
IC15
CLAMP
CLK
CLP
4SC VCO
X4, IC3
IC26
2SC GENE
2SC
IC25
CCD CLK GENE
CCD CLK
ESS
CN204
CN104
BL
SYNC
SC
BURST
BYPASS
CN203
CN103
RCD7
RCD6
RCD5
RCD4
RCD3
RCD2
RCD1
RCD0
CLK
IC66
D/A
Y DATA
IC65
BL MIX
VR49
SYNC MIX
Q61, Q62
BA
C371, C372, C375
L46, L48
LPF
TP25
DL2
DELAY
Y
Q76~Q79
DRIVE AMP
IC74
SYNC PULSE AMP
DC BIAS DET
Q74
Q75
DRIVE AMP
BYPASS
S-Y IN
S-Y OUT1
S-Y OUT2
Y OUT
IC75
SYNC MIX
IC75
DRIVE AMP
C446, C449, C451
L61, L62
LPF
IC69
AMP
TP26
IC63
PR MOD
IC68
CLAMP
TP46
Q86
Q87
BA
IC73
BL MIX
IC37
PR SC GENE
L ALT
IC38, IC45, IC52
PHASE CONT
CHROMA PHASE VR7
VR35
PB SC
C DATA
IC76
D/A
IC72
BL MIX
Q68
Q69
BA
IC68
CLAMP
C413, C416, C417
L52, L54
LPF
IC70
AMP
IC64
PB MOD
TP27
IC71
DRIVE AMP
C1
BF
BL
IC62
BURST MIX
Q53, Q24
BA
TP23
PHASE CONT
C DEL
VR21
Q70~Q73
DRIVE AMP
VR50
YC MIX
Q80~Q83
DRIVE AMP
S/C
VIDEO IN
BYPASS
VIDEO IN
VIDEO OUT1
VIDEO OUT2
S-C
BYPASS
S-C IN
S-C OUT1
S-C OUT2
PR OUT
PB OUT
OUTPUT PROCESS

DIGITAL BLOCK DIAGRAM (1/5)

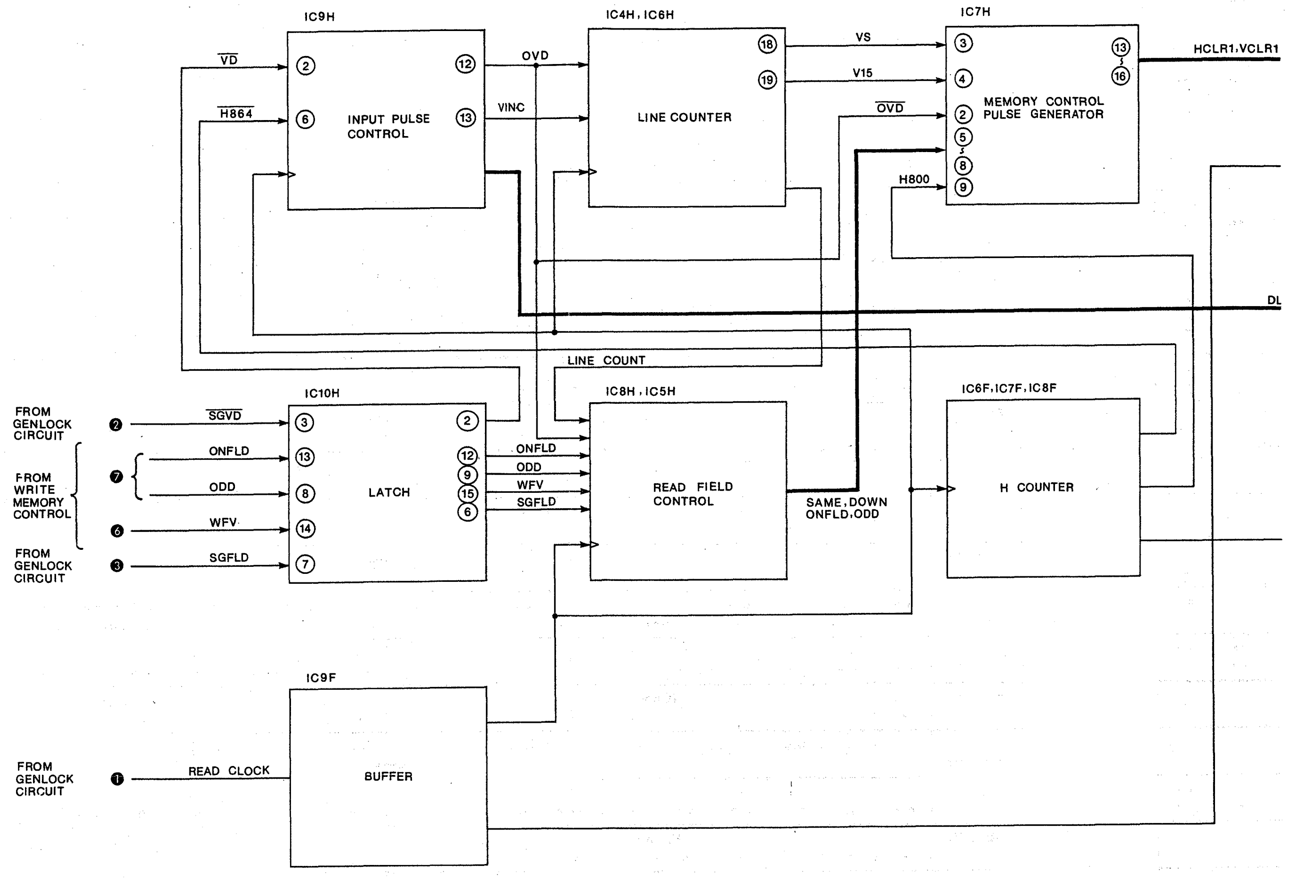

DROP OUT COMPENSATION
MEMORY CIRCUIT
CN201 FROM PROCESS
WYD 7 2
WYD 6 4
WYD 5 6
WYD 4 8
WYD 3 10
WYD 2 12
WYD 1 14
WYD 0 16
Y SIGNAL DATA
WYD 0 ~ 7
IC 17C
GATE CIRCUIT
SIGNAL IN
SIGNAL OUT
WCLK 4
IC 17D
1H MEMORY
SIGNAL IN
SIGNAL OUT
Y SIGNAL DATA
WYD 10 ~ 17
IC 3J , IC 3K
Y FIELD MEMORY
SIGNAL IN
SIGNAL OUT
WRITE CLOCK
CONTROL
WRITE ENABLE
READ CLOCK
CONTROL
OUTPUT ENABLE
IC 5J , IC 5K
Y FIELD MEMORY
TP 6 (RYD17)
Y SIGNAL
RYD 10 ~ 17
IC 15F
LATCH
SIGNAL IN
SIGNAL OUT
IC 16F
SHIFTER
SIGNAL IN
SIGNAL OUT
CN201 FROM PROCESS
WCD 7 34
WCD 6 32
WCD 5 30
WCD 4 28
WCD 3 26
WCD 2 24
WCD 1 22
WCD 0 20
C SIGNAL DATA
WCD 0 ~ 7
IC 18C
GATE CIRCUIT
IC 18D
1H MEMORY
FROM WRITE MEMORY CONTROL
WCLK 4
IC (1A, 10N, 14E, 10E) Q(12,13)
DROP OUT DETECTOR
DOC IN
CN206 3
Q13
NDOC
IC 10E
DOC
C SIGNAL DATA
WCD 10 ~ 17
TP7 (VCLR0)
TP8 (INC0)
TP12 (HCLR0)
TP9
TP11 (VCLR1)
TP13 (INC1)
TP10 (HCLR1)
TP15
IC 8J , IC 8K
C FIELD MEMORY
IC 10J , IC 10K
C FIELD MEMORY
C SIGNAL
RCD 10 ~ 17
IC 11
1H MEMORY
SIGNAL IN
SIGNAL OUT
FROM WRITE MEMORY CONTROL ⑧
WRITE CLOCK (1)
HCLR0, VCLR0, INC0 (2)
WE 1 (3)
WE2 (7)
FROM READ MEMORY CONTROL ⑤
READ CLOCK (4)
HCLR1, VCLR1, INC1 (5)
DE 11 (6)
OE12 (8)
FOR YOUR INFORMATION
8BIT DIGITAL DATA
WCD14 ~ 17
4BIT
IC 8J
WCD10 ~ 13
4BIT
IC 8K
RCD10 ~ 17
TP16
TP14
FROM READ MEMORY CONTROL ⑬


MEMORY CIRCUIT
READ DATA CIRCUIT
IC 3J , IC 3K
Y FIELD MEMORY
㉔ ~ ㉗ SIGNAL IN
SIGNAL OUT ⑤ ~ ⑧
⑰ WRITE CLOCK
⑭ ~ ⑯ CONTROL
⑬ WRITE ENABLE
④ READ CLOCK
⑩ ~ ⑫ CONTROL
⑨ OUTPUT ENABLE
IC 5J , IC 5K
Y FIELD MEMORY
㉔ ~ ㉗ SIGNAL IN
SIGNAL OUT ⑤ ~ ⑧
⑰ WRITE CLOCK
⑭ ~ ⑯ CONTROL
⑬ WRITE ENABLE
④ READ CLOCK
⑩ ~ ⑫ CONTROL
⑨ OUTPUT ENABLE
TP 6 (RYD17)
Y SIGNAL
RYD 10 ~ 17
IC 15F
LATCH
⑬ ⑧ ⑭ ⑦ ⑰ ④ ⑱ ③ SIGNAL IN
SIGNAL OUT ⑫ ⑨ ⑮ ⑥ ⑯ ⑤ ⑲ ②
IC 16F
SHIFTER
⑧ ~ ① SIGNAL IN
SIGNAL OUT ⑱ ~ ㉕
IC 18H
1H MEMORY
㉔ ~ ㉗ SIGNAL IN ① ~ ④
SIGNAL OUT ⑱ ~ ⑮ ⑬ ~ ⑩
IC 18 J , IC 17 J
SELECTOR
(IC 18 J) SIGNAL IN
(IC 17 J) SIGNAL IN
⑪ SELECT CONTROL
SIGNAL OUT
Y SIGNAL
RCD 0 ~ 7
CN 203 TO PROCESS
16 RYD 7
14 RYD 6
12 RYD 5
10 RYD 4
8 RYD 3
6 RYD 2
4 RYD 1
2 RYD 0
DL , NDL
PASS , NPASS
IC 8J , IC 8K
C FIELD MEMORY
㉔ ~ ㉗ SIGNAL IN
SIGNAL OUT ⑤ ~ ⑧
⑰ WRITE CLOCK
⑭ ~ ⑯ CONTROL
⑬ WRITE ENABLE
④ READ CLOCK
⑩ ~ ⑫ CONTROL
⑨ OUTPUT ENABLE
IC 10 J , IC 10K
C FIELD MEMORY
㉔ ~ ㉗ SIGNAL IN
SIGNAL OUT ⑤ ~ ⑧
⑰ WRITE CLOCK
⑭ ~ ⑯ CONTROL
⑬ WRITE ENABLE
④ READ CLOCK
⑩ ~ ⑫ CONTROL
⑨ OUTPUT ENABLE
C SIGNAL
RCD 10 ~ 17
IC 11
1H MEMORY
㉔ ~ ㉗ SIGNAL IN ① ~ ④
SIGNAL OUT ⑱ ~ ⑮ ⑬ ~ ⑩
IC14H , IC 13H
ADDER
SIGNAL IN
SIGNAL IN
SIGNAL OUT
IC14 J , IC 13J
SELECTOR
(IC 14 J) SIGNAL IN
(IC 13 J) SIGNAL IN
⑪ SELECT CONTROL
SIGNAL OUT
C SIGNAL
RCD 0 ~ 7
CN 203 TO PROCESS
20 RCD 7
22 RCD 6
24 RCD 5
26 RCD 4
28 RCD 3
30 RCD 2
32 RCD 1
34 RCD 0
RCD 10 ~ 17
TP 16
TP 14
(7)
(8)

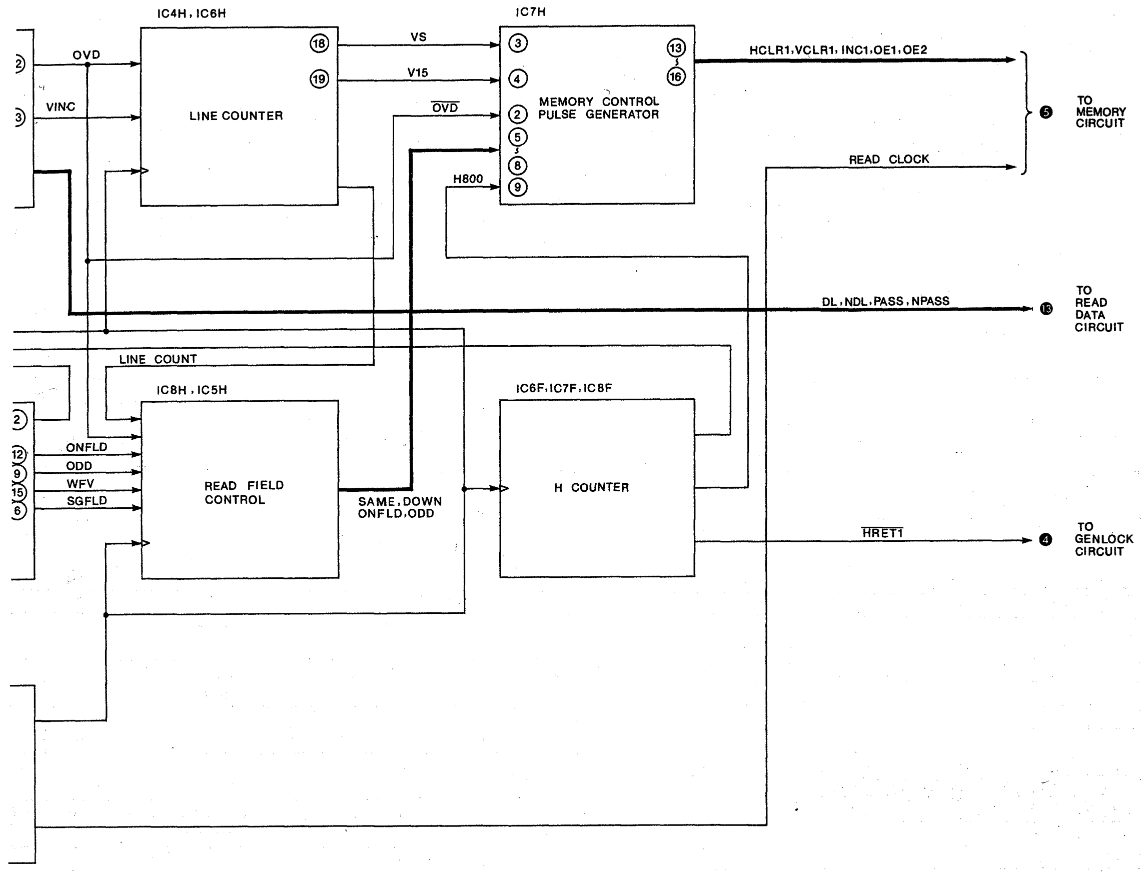
DIGITAL BLOCK DIAGRAM (2/5)


FROM PROCESS
⑫
⑲
CN202 8
HSAMP
CN202 12
SHUTTLE
CN202 10
NOVID
CN202 6
WSYNC
H864
IC13E, IC14E, IC15D
INPUT PULSE CONTROL
VD, HD, VINC
IC4E, IC6E
LINE COUNTER
VS, VE
OFRZ
WFLD
IC7E
MEMORY CONTROL PULSE GENERATOR
HCLRO, VCLRO, INCO, WE1, WE2
WCLK3
⑧
TO MEMORY CIRCUIT
WFV
⑥
TO READ MEMORY CONTROL
FROM CONTROL CIRCUIT
⑪
FMFZ, FDFZ
IC13E, IC11E
NOVIDF
JP4
SW2
FID
+5V
FREEZE CONTROL
IC17E, IC18E
VD
FIELD DETECTER
H COUNT
WCLP2
CN202 16
TO PROCESS
ONFLD, ODD
⑦
TO READ MEMORY CONTROL
IC18F
FROM PROCESS
⑱
CN202 4
WCLK
⑬
⑰
⑪
⑮
BUFFER
⑦
③
⑨
⑤
WCLK1
WCLK 2
WCLK3
WCLK4
IC15E, IC16E
H COUNTER
WRB
CN202 20
⑨
WHRESET
CN202 14
⑩
TO PROCESS
WCLK4
⑮
TO DOROPOUT COMPENSATION
FOR YOUR INFORMATION
SIGNAL
❶
❶
THE SAME NUMBAR SIGNAL LINE IS CONNECT IN THE P.C.BOARD.

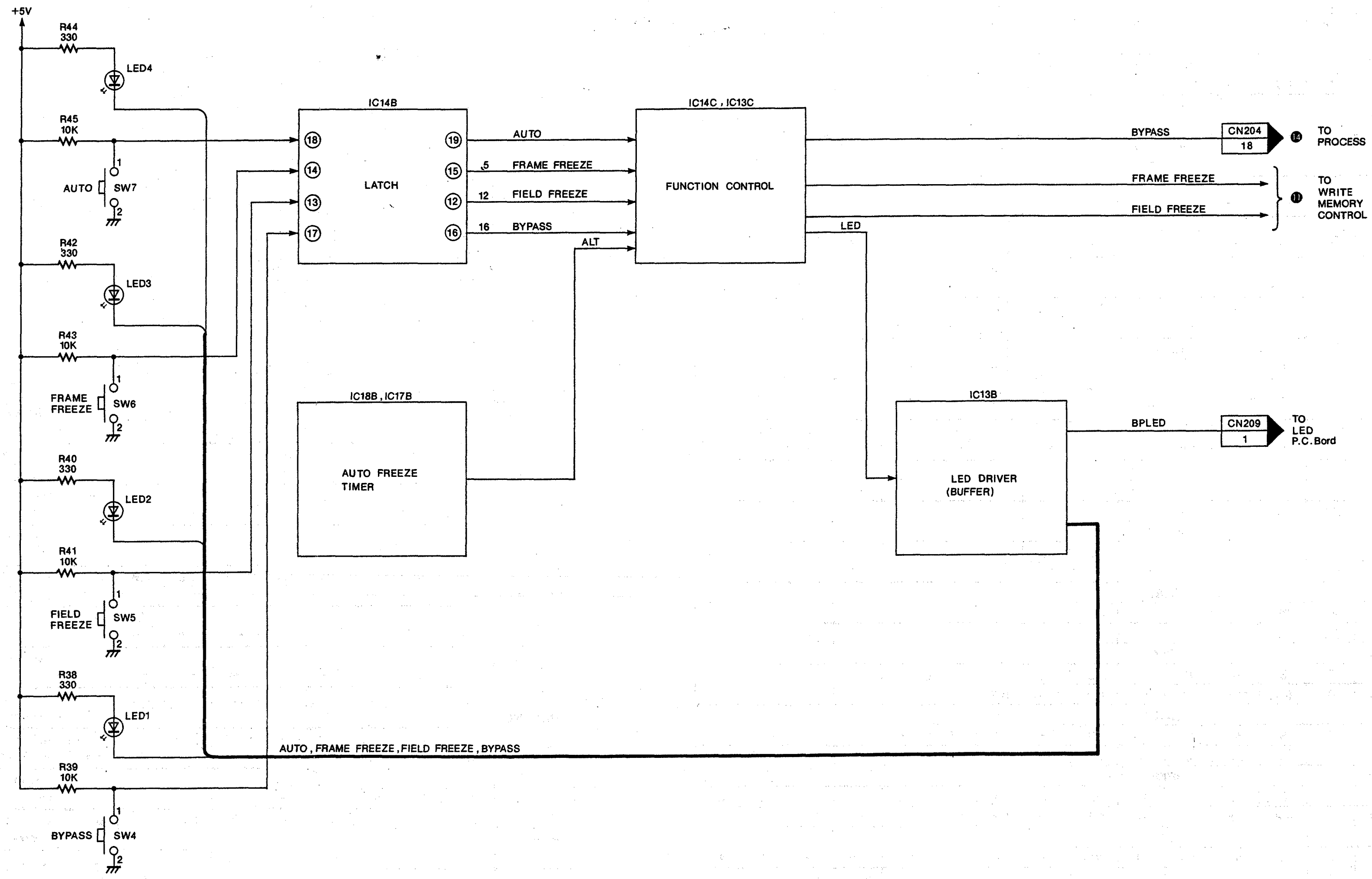
DIGITAL BLOCK DIAGRAM (3/5)


IC9H
VD
②
H864
⑥
INPUT PULSE CONTROL
⑫
⑬
OVD
VINC
IC4H, IC6H
LINE COUNTER
⑱
⑲
VS
V15
OVD
H800
IC7H
③
④
②
⑤
⑧
⑨
MEMORY CONTROL PULSE GENERATOR
⑬
⑯
HCLR1, VCLR1
DL
LINE COUNT
FROM GENLOCK CIRCUIT
②
SGVD
IC10H
③
FROM WRITE MEMORY CONTROL
⑦
ONFLD
⑬
ODD
⑧
⑥
WFV
⑭
FROM GENLOCK CIRCUIT
③
SGFLD
⑦
LATCH
②
⑫
⑨
⑮
⑥
ONFLD
ODD
WFV
SGFLD
IC8H, IC5H
READ FIELD CONTROL
SAME, DOWN ONFLD, ODD
IC6F, IC7F, IC8F
H COUNTER
IC9F
FROM GENLOCK CIRCUIT
①
READ CLOCK
BUFFER

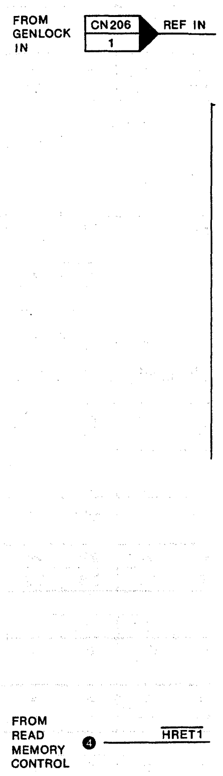
RAM (3/5)


IC4H, IC6H
LINE COUNTER
OVD
VINC
VS
V15
OVD
H800
IC7H
MEMORY CONTROL PULSE GENERATOR
HCLR1, VCLR1, INC1, OE1, OE2
TO MEMORY CIRCUIT
READ CLOCK
DL, NDL, PASS, NPASS
TO READ DATA CIRCUIT
LINE COUNT
IC8H, IC5H
READ FIELD CONTROL
ONFLD
ODD
WFV
SGFLD
SAME, DOWN ONFLD, ODD
IC6F, IC7F, IC8F
H COUNTER
HRET1
TO GENLOCK CIRCUIT

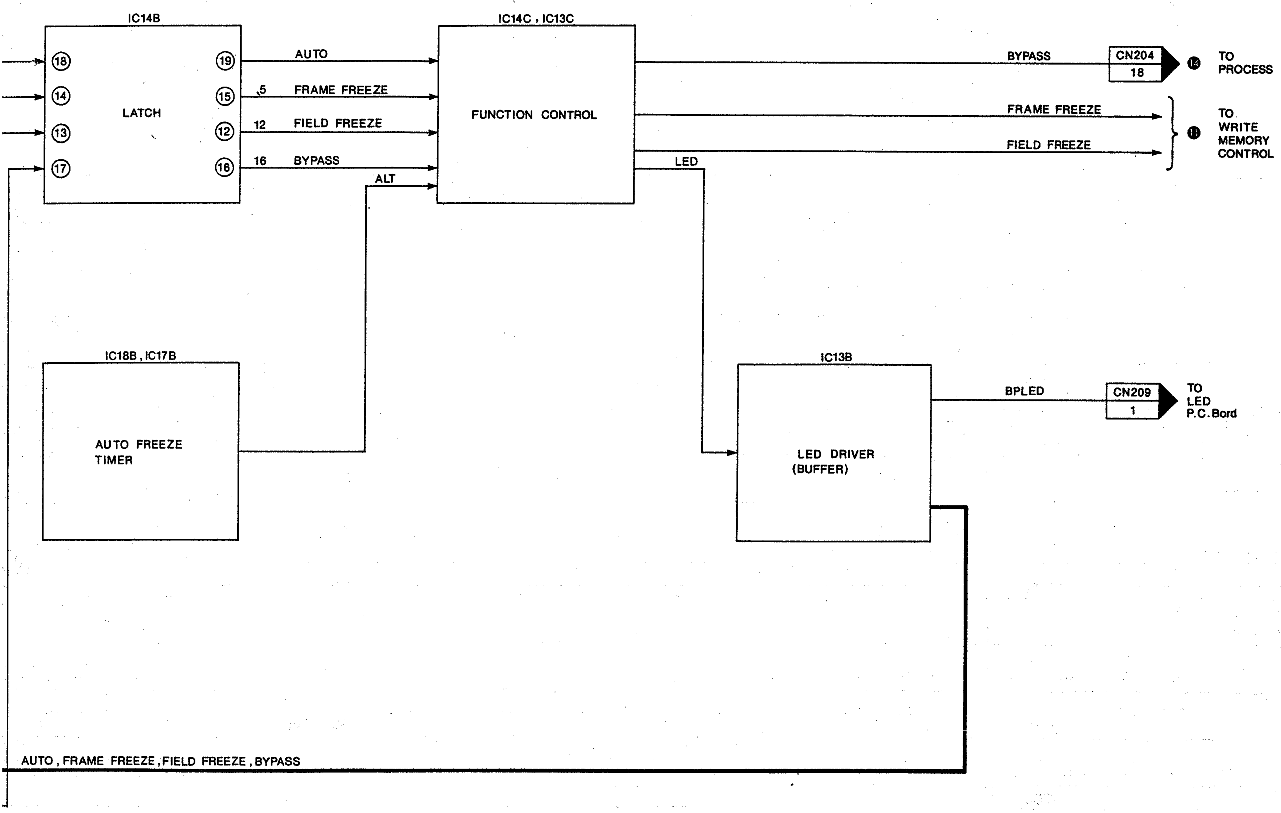
DIGITAL BLOCK DIAGRAM (4/5)


+5V
R44 330
LED4
R45 10K
AUTO
SW7
R42 330
LED3
R43 10K
FRAME FREEZE
SW6
R40 330
LED2
R41 10K
FIELD FREEZE
SW5
R38 330
LED1
R39 10K
BYPASS
SW4
IC14B
LATCH
AUTO
5 FRAME FREEZE
12 FIELD FREEZE
16 BYPASS
ALT
IC14C, IC13C
FUNCTION CONTROL
LED
BYPASS
CN204 18
TO PROCESS
FRAME FREEZE
FIELD FREEZE
TO WRITE MEMORY CONTROL
IC18B, IC17B
AUTO FREEZE TIMER
IC13B
LED DRIVER (BUFFER)
BPLED
CN209 1
TO LED P.C. Bord
AUTO, FRAME FREEZE, FIELD FREEZE, BYPASS

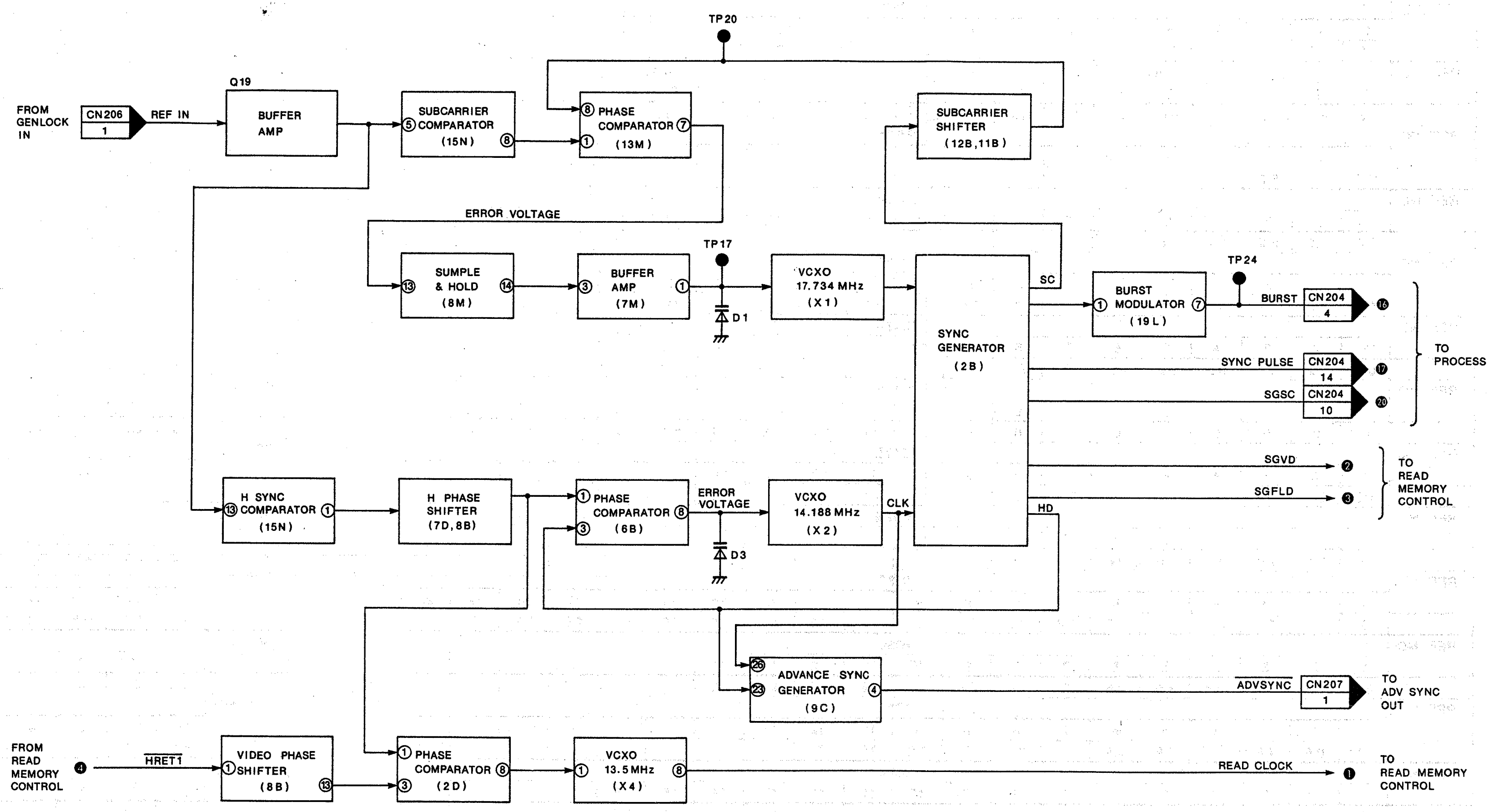
DIGITAL


FROM GENLOCK IN
CN206 1
REF IN
FROM READ MEMORY CONTROL
HRET1

K DIAGRAM (4/5)


IC14B
LATCH
⑱
⑭
⑬
⑰
⑲
⑮
⑫
⑯
AUTO
5 FRAME FREEZE
12 FIELD FREEZE
16 BYPASS
ALT
IC14C , IC13C
FUNCTION CONTROL
LED
BYPASS
CN204
18
⓳
TO PROCESS
FRAME FREEZE
FIELD FREEZE
⓭
TO WRITE MEMORY CONTROL
IC18B , IC17B
AUTO FREEZE TIMER
IC13B
LED DRIVER (BUFFER)
BPLED
CN209
1
TO LED P.C. Bord
AUTO , FRAME FREEZE , FIELD FREEZE , BYPASS

DIGITAL BLOCK DIAGRAM (5/5)


FROM GENLOCK IN
CN206
1
REF IN
Q19
BUFFER AMP
SUBCARRIER COMPARATOR (15N)
⑤
⑧
TP20
⑧ PHASE COMPARATOR ⑦
① (13M)
SUBCARRIER SHIFTER (12B,11B)
ERROR VOLTAGE
SUMPLE & HOLD (8M)
⑬
⑭
BUFFER AMP (7M)
③
①
TP17
D1
VCXO 17.734 MHz (X1)
SYNC GENERATOR (2B)
SC
BURST MODULATOR (19L)
①
⑦
TP24
BURST
CN204
4
⓰
SYNC PULSE
CN204
14
⓱
SGSC
CN204
10
⓴
TO PROCESS
SGVD
❷
SGFLD
❸
TO READ MEMORY CONTROL
H SYNC COMPARATOR (15N)
⑬
①
H PHASE SHIFTER (7D,8B)
① PHASE COMPARATOR ⑧
③ (6B)
ERROR VOLTAGE
D3
VCXO 14.188 MHz (X2)
CLK
HD
ADVANCE SYNC GENERATOR (9C)
㉖
㉓
④
ADVSYNC
CN207
1
TO ADV SYNC OUT
FROM READ MEMORY CONTROL
❹
HRET1
VIDEO PHASE SHIFTER (8B)
①
⑬
① PHASE COMPARATOR ⑧
③ (2D)
VCXO 13.5MHz (X4)
①
⑧
READ CLOCK
❶
TO READ MEMORY CONTROL

DIGITAL ICs DC VOLTAGE CHART

REF. NO.	IC1A																			
	1	2	3	4	5	6	7	8												
	0	−0.1	0.2	−12.0	0	0	0	12.0												
REF. NO.	IC2B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	4.2	5.0	4.8	4.6	3.7	3.8	2.5	4.5	2.3	0.8	0.5	4.9	0.5	0	0.4	0	0	0.4	2.0	4.1
REF. NO.	IC2B																			
	21	22	23	24	25	26	27	28												
	5.0	5.0	0	0	2.3	0.8	2.5	5.0												
REF. NO.	IC6B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.0	3.7	0.6	3.8	1.4	3.3	0	2.5	1.4	1.4	3.7	0.5	3.8	5.0						
REF. NO.	IC8B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.2	5.0	5.0	3.4	0.4	4.5	1.1	0	0	2.4	5.0	3.5	0.6	4.3	1.2	5.0				
REF. NO.	IC9B										IC10B									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
	7.5	8.1	7.3	0	8.6	8.9	8.3	12.0			11.2	11.2	0	0	3.2	3.5	4.5	12.0		
REF. NO.	REG1																			
	I	C	O																	
	12.0	0	5.0																	
REF. NO.	IC11B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0.6	5.2	5.2	1.4	0.6	3.0	1.0	0	0.6	5.2	5.2	2.5	1.7	1.9	0.7	5.2				
REF. NO.	IC12B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	2.6	5.2	5.2	3.0	0.6	3.0	1.0	0	0.6	5.2	5.2	2.5	0.6	2.9	0.6	5.2				
REF. NO.	IC13B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0.1	0.2	0.1	0.2	0.2	0.2	0	3.5	4.2	3.5	4.2	3.4	4.2	5.2						
REF. NO.	IC14B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	0	0	0	0	0	0	0	0	0	1.4	5.2	3.8	4.1	5.2	5.2	3.7	3.7	5.2	5.2
REF. NO.	IC17B																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.2	2.0	5.2	5.2	5.2	5.2	5.2	0	5.2	5.2	4.1	0.2	4.0	4.1	0.2	5.2				
REF. NO.	IC18B																			
	1	2	3	4	5	6	7	8												
	0	0.6	2.0	4.2	1.0	0.8	1.6	5.2												
REF. NO.	IC3C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	4.8	2.6	4.5	5.1	2.5	3.8	4.6	3.7	0	4.4	4.8	4.1	2.6	4.9	4.6	2.0	5.0	0	5.2
REF. NO.	IC5C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0.4	0.8	5.0	0.4	4.6	0.6	0	2.0	2.6	0.4	4.8	0.3	4.1	5.2						
REF. NO.	IC6C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.2	0.6	4.8	0.2	3.9	4.8	0	0.1	0	0.2	2.5	0	4.1	5.2						
REF. NO.	IC7C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	0.2	5.2	0.2	4.4	0	0.6	0	1.2	1.1	1.1	4.0	4.1	0	1.2	5.2				
REF. NO.	IC9C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	4.2	5.2	5.0	4.8	4.5	3.8	2.6	4.6	0	0.6	0.6	5.0	0.6	0	0.2	0.2	0.6	0.6	5.2	5.2
REF. NO.	IC9C																			
	21	22	23	24	25	26	27	28												
	5.2	5.2	0.6	0	2.4	0.9	2.6	5.2												
REF. NO.	IC10C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0.1	5.2	5.2	5.1	0.1	0	4.3	0	0	3.6	5.2	5.1	0.1	0.6	4.9	5.2				
REF. NO.	IC11C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.5	1.5	1.6	1.6	0.2	3.7	0	3.6	5.1	0	0.1	1.1	1.1	5.2						
REF. NO.	IC12C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	5.2	5.1	1.5	4.3	4.1	0.2	0	4.1	0.4	5.2	4.3	5.2	1.2	5.2						
REF. NO.	IC13C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	4.6	5.2	5.2	4.2	4.4	0.7	0.7	5.0	0	0	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.2
REF. NO.	IC14C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	4.5	5.2	5.2	0.7	0.6	0.6	0.6	4.9	0	0	4.2	0.1	4.2	4.2	4.2	4.2	4.2	4.2	5.2

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DIGITAL ICs DC VOLTAGE CHART

REF. NO.	IC17C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	2.2	1.4	1.1	1.8	2.3	1.8	0.6	0.9	0	2.3	0.9	0.9	1.7	1.9	1.5	1.3	2.3	2.4	5.2
REF. NO.	IC18C																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	2.9	1.5	1.3	2.5	2.2	0.9	2.4	2.9	0	2.3	2.1	1.3	1.2	2.2	2.2	1.1	1.4	2.5	5.2
REF. NO.	IC2D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.9	3.7	0.6	3.7	1.4	3.3	0	2.9	1.4	1.4	3.7	0.4	3.7	5.0						
REF. NO.	IC7D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	−0.1	5.2	1.6	0.2	5.1	0.8	0	0	3.6	5.2	4.0	2.4	2.3	0.3	5.2				
REF. NO.	IC8D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0	3.9	1.2	0.1	0.2	4.5	0	0.2	4.9	5.0	0.4	0.5	4.1	5.2						
REF. NO.	IC10D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5.2	5.2	5.2	0.7	1.0	0.7	4.1	0	0	0.5	5.2	4.2	0	0	0.6	0.6				
REF. NO.	IC11D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.2	0.1	1.2	0.1	1.2	0.2	0	0.5	4.6	1.2	4.2	0.4	4.8	5.2						
REF. NO.	IC13D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0.4	4.2	4.9	5.0	1.2	4.2	0	0	5.2	5.2	0	5.2	5.2	5.2						
REF. NO.	IC14D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5.0	5.2	0.6	4.2	0.6	0	1.3	0	0	4.3	5.2	4.2	0.1	0	1.5	5.2				
REF. NO.	IC15D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	7.3	0.1	3.9	1.5	0.2	5.1	0	0.2	5.1	5.3	0.4	0.6	4.0	5.2						
REF. NO.	IC17D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0.8	2.5	1.8	2.2	5.2	5.2	5.2	0	4.2	2.2	1.8	2.4	0.8	0	2.3	1.5	1.8	0.9	4.3	4.3
REF. NO.	IC17D																			
	21	22	23	24	25	26	27	28												
	0	2.4	0.6	0.9	2.0	1.5	2.3	5.2												
REF. NO.	IC18D																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.5	2.2	2.8	2.4	5.2	5.2	5.2	0	4.2	2.4	0.6	2.2	2.5	0	2.2	2.3	2.2	2.8	4.2	4.2
REF. NO.	IC18D																			
	21	22	23	24	25	26	27	28												
	0	2.3	0.6	2.9	2.2	2.2	2.2	5.2												
REF. NO.	IC2E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	10.0	0.1	0	0	0.8	1.3	0	0.1	10.0	0.1	10.0	0.1	10.0	5.2						
REF. NO.	IC4E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5.1	2.3	0	0	0	0	5.2	0	5.2	0	2.5	2.4	2.4	2.4	0.2	5.2				
REF. NO.	IC6E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	2.4	2.4	2.4	2.4	0.2	5.0	4.4	2.5	0	0	2.5	3.0	2.4	2.0	0.9	0	0	0	5.2
REF. NO.	IC7E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	4.3	0	0	4.2	4.0	0	0.7	0.7	0	0	0	0	0	4.1	3.7	4.2	4.3	4.3	5.2
REF. NO.	IC8E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.3	2.4	0	0	0	0	5.2	0	5.2	5.2	1.9	1.9	1.2	0.8	0.3	5.2				
REF. NO.	IC9E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	20	21	22	23	24	25
	2.4	0.8	1.4	1.8	1.9	0.3	0.7	0.7	0.7	0	0	1.9	1.9	1.9	1.8	1.6	1.6	4.3	4.2	5.2
REF. NO.	IC10E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.4	0.1	3.9	0.7	0.7	0.7	0.7	0.7	0.7	0	0	4.2	0	4.2	4.2	4.2	4.2	4.2	4.2	5.2
REF. NO.	IC11E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.4	3.9	0.1	0.1	4.8	3.0	4.8	0.7	0.7	0	0	0	0	0	3.0	0	0	0	4.2	5.2
REF. NO.	IC13E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	0.6	3.8	3.9	3.9	0	4.3	4.7	0	0	0	4.3	4.2	0	0	0.5	4.2	4.2	3.2	5.2
REF. NO.	IC14E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	0.6	0.6	0.6	3.9	0.1	0	−0.6	0.1	0	2.3	3.9	4.8	0	0.1	3.9	5.1	4.2	3.8	5.2

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DIGITAL ICs DC VOLTAGE CHART

REF. NO.	IC15E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.3	2.3	0	0	0	0	5.2	0	5.2	5.2	3.0	2.3	1.4	0.9	0.3	5.2				
REF. NO.	IC16E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	1.0	1.3	2.2	3.0	0.3	0.6	0.6	0.6	0	0	2.0	1.9	1.9	1.8	1.6	1.7	4.3	4.3	5.2
REF. NO.	IC17E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	1.0	1.4	2.3	3.0	2.0	1.9	1.9	1.8	0	0	1.6	1.7	0	0	0	0	4.2	4.2	5.2
REF. NO.	IC18E																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.3	4.3	0	0	0	0	0.6	0.6	0.6	0	0	3.6	0.1	2.0	3.6	4.0	4.1	4.0	4.2	5.2
REF. NO.	IC4F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.6	1.4	0	0	0	0	5.2	0	5.2	5.2	1.9	1.8	1.6	1.0	0.3	5.2				
REF. NO.	IC5F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	0.9	1.6	1.8	1.9	0.3	7.1	7.1	7.2	0	0	2.0	2.0	2.0	1.9	1.7	1.7	4.7	4.8	5.2
REF. NO.	IC6F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.6	1.4	0	0	0	0	5.2	0	5.2	5.2	1.9	1.8	1.6	1.0	0.3	5.2				
REF. NO.	IC7F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	1.0	1.6	1.8	1.9	2.0	2.0	2.0	1.9	0	0	1.7	1.7	0	8.6	8.6	8.6	5.2	7.9	5.2
REF. NO.	IC8F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	1.0	1.6	1.8	1.9	0.3	7.0	6.8	7.1	0	0	2.0	2.0	2.0	1.8	1.7	1.7	4.6	4.4	5.2
REF. NO.	IC9F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	0.9	1.4	0	1.4	0	1.4	1.3	1.3	0	1.3	1.3	1.3	0.2	1.3	0.2	1.3	1.8	0	5.2
REF. NO.	IC11F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0	0.2	0.4	5.0	5.2	0	0	0	5.2	0	5.2	0	5.2	5.2						
REF. NO.	IC14F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1.7	1.4	1.6	2.3	1.8	1.7	1.8	0	4.0	4.0	4.0	3.9	0	0	2.1	5.2				
REF. NO.	IC15F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	2.3	1.7	2.0	2.6	2.5	2.0	1.6	2.0	0	1.4	0.9	0.7	1.2	1.5	0.7	0.7	1.4	1.9	5.2
REF. NO.	IC16F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.2	2.0	2.6	0.7	2.4	1.5	2.0	0.9	0	0	0	5.2	1.4	0	0	5.2	5.2	0.9	1.9	1.4
REF. NO.	IC16F																			
	21	22	23	24	25	26	27	28												
	2.2	0.6	2.3	1.5	1.7	5.2	0	5.2												
REF. NO.	IC18F																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	1.3	2.4	4.3	2.3	0.1	2.3	0	2.3	0	1.6	0	1.6	0.2	1.6	5.2	1.6	2.4	0	0.7
REF. NO.	IC4H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5.2	1.4	0	0	0	0	5.2	0	9.0	0	2.5	2.4	2.4	2.4	0.2	5.2				
REF. NO.	IC5H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	2.4	2.4	2.4	2.4	2.6	3.1	2.7	2.1	0	0	1.9	5.2	4.9	0	0	0	0	0	5.2
REF. NO.	IC6H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	2.4	2.4	2.4	2.4	0.2	5.2	7.2	7.2	0	0	2.5	2.9	3.8	2.1	2.5	8.4	0	0	5.2
REF. NO.	IC7H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	5.2	0	0	4.9	6.8	0	0	0	0	0	4.6	0	0	0	5.1	8.4	8.1	8.3	5.2
REF. NO.	IC8H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.3	5.1	5.2	0	0	0	0.1	0	0	0	0	4.9	5.1	0	0	5.7	5.5	0	8.8	5.2
REF. NO.	IC9H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.4	0	5.0	0	5.2	4.6	5.2	2.2	2.1	0	0	4.9	0	4.7	0.1	0	4.8	0	5.0	5.2
REF. NO.	IC10H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	0	0.1	5.2	5.2	4.5	3.5	0	0	0	1.4	0	0	0	0	0	0	0	0	5.2

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DIGITAL ICs DC VOLTAGE CHART

REF. NO.	IC11H															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1.9	1.5	1.8	2.2	5.2	5.2	5.2	0	0	2.2	1.9	1.4	1.8	0	1.6	1.4
REF. NO.	IC11H															
	21	22	23	24	25	26	27	28								
	0	1.4	0.7	2.4	1.6	1.6	1.7	5.2								
REF. NO.	IC13H															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	2.1	1.9	1.7	1.7	2.2	2.2	0	0	1.7	1.4	1.8	1.8	1.9	1.6	1.5	5.2
REF. NO.	IC14H															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1.6	1.4	1.7	1.8	1.7	1.6	1.6	0	2.0	1.7	2.4	2.4	1.6	1.7	1.7	5.2
REF. NO.	IC16H															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	2.6	2.6	1.8	2.6	0	1.9	0	0.2	7.3	7.4	0.2	7.5	7.8	5.2		
REF. NO.	IC18H															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0.6	2.2	1.5	1.6	5.2	5.2	5.2	0	0	1.7	1.5	2.2	0.6	0	0.8	1.4
REF. NO.	IC18H															
	21	22	23	24	25	26	27	28								
	0	1.4	0	1.6	2.0	1.4	2.3	0.1								
REF. NO.	IC13J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.8	2.3	1.7	1.7	2.4	1.9	1.6	2.2	2.9	0	1.4	2.7	1.7	1.8	2.6	2.4
REF. NO.	IC14J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0.1	2.4	1.7	1.6	2.4	1.9	1.4	2.2	2.9	0	1.4	2.6	1.9	1.8	2.6	2.4
REF. NO.	IC15J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.2
REF. NO.	IC16J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	5.2	5.1	0	5.2	0	5.1	0	0	0	5.2	0	5.2	0	0	0	5.2
REF. NO.	IC17J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0	1.9	1.5	0.6	0.7	1.5	1.5	0.9	0.9	0	1.4	2.0	2.0	2.2	2.3	2.6
REF. NO.	IC18J															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.4	1.8	1.5	0.6	0.7	1.5	1.4	0.9	0.9	0	1.4	2.0	1.9	2.3	2.3	2.6
REF. NO.	IC2M										IC3M					
	1	2	3	4	5	6					1	2	3	4	5	6
	0.3	4.4	0.3	0	4.9	0.3					5.2	9.2	0	0	5.2	0.1
REF. NO.	IC4M										IC7M					
	1	2	3	4	5	6	7	8			1	2	3	4	5	6
	0	0	0.8	−12.0	11.7	11.6	0.4	12.0			0.2	0	0	−12.0	0	0
REF. NO.	IC8M															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	0.1	0	0.7	0.7	0.7	0	−12.0	0	2.5	0.1	0.2	0.1	0	0	0	5.2
REF. NO.	IC13M										IC15L					
	1	2	3	4	5	6	7				1	2	3	4	5	6
	3.1	3.5	3.5	0	6.3	12.0	8.4				0	0	0	−12.0	0	0
REF. NO.	IC19L										IC7N					
	1	2	3	4	5	6	7				1	2	3	4	5	6
	3.1	3.5	3.5	0	6.2	12.0	8.4				0.8	0.8	0.8	−12.0	0	0
REF. NO.	IC10N															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	−0.4	5.2	12.0	0	0	0	−5.7	−0.6	−0.4	12.0	0	0	0.2	−5.7		
REF. NO.	IC15N															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	0	5.2	12.0	0.7	0	0	−5.7	1.6	5.2	12.0	0	0	0.5	−5.7		

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

- POWER SW…ON.
- VIDEO INPUT CONNECTOR…PAL COLOUR BAR SIGNAL INPUT.

DIGITAL ICs DC VOLTAGE CHART

REF. NO.	IC11H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.9	1.5	1.8	2.2	5.2	5.2	5.2	0	0	2.2	1.9	1.4	1.8	0	1.6	1.4	1.6	2.4	4.3	4.3
REF. NO.	IC11H																			
	21	22	23	24	25	26	27	28												
	0	1.4	0.7	2.4	1.6	1.6	1.7	5.2												
REF. NO.	IC13H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	2.1	1.9	1.7	1.7	2.2	2.2	0	0	1.7	1.4	1.8	1.8	1.9	1.6	1.5	5.2				
REF. NO.	IC14H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1.6	1.4	1.7	1.8	1.7	1.6	1.6	0	2.0	1.7	2.4	2.4	1.6	1.7	1.7	5.2				
REF. NO.	IC16H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	2.6	2.6	1.8	2.6	0	1.9	0	0.2	7.3	7.4	0.2	7.5	7.8	5.2						
REF. NO.	IC18H																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0.6	2.2	1.5	1.6	5.2	5.2	5.2	0	0	1.7	1.5	2.2	0.6	0	0.8	1.4	2.1	0.9	4.7	4.7
REF. NO.	IC18H																			
	21	22	23	24	25	26	27	28												
	0	1.4	0	1.6	2.0	1.4	2.3	0.1												
REF. NO.	IC13J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	4.8	2.3	1.7	1.7	2.4	1.9	1.6	2.2	2.9	0	1.4	2.7	1.7	1.8	2.6	2.4	1.6	2.5	2.9	5.2
REF. NO.	IC14J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0.1	2.4	1.7	1.6	2.4	1.9	1.4	2.2	2.9	0	1.4	2.6	1.9	1.8	2.6	2.4	1.6	2.0	3.0	5.2
REF. NO.	IC15J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.2				
REF. NO.	IC16J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	5.2	5.1	0	5.2	0	5.1	0	0	0	5.2	0	5.2	0	0	0	5.2				
REF. NO.	IC17J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	1.9	1.5	0.6	0.7	1.5	1.5	0.9	0.9	0	1.4	2.0	2.0	2.2	2.3	2.6	2.3	1.7	2.3	5.2
REF. NO.	IC18J																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	4.4	1.8	1.5	0.6	0.7	1.5	1.4	0.9	0.9	0	1.4	2.0	1.9	2.3	2.3	2.6	2.3	1.7	2.3	5.2
REF. NO.	IC2M										IC3M									
	1	2	3	4	5	6					1	2	3	4	5	6				
	0.3	4.4	0.3	0	4.9	0.3					5.2	9.2	0	0	5.2	0.1				
REF. NO.	IC4M										IC7M									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
	0	0	0.8	−12.0	11.7	11.6	0.4	12.0			0.2	0	0	−12.0	0	0	0	12.0		
REF. NO.	IC8M																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0.1	0	0.7	0.7	0.7	0	−12.0	0	2.5	0.1	0.2	0.1	0	0	0	5.2				
REF. NO.	IC13M										IC15L									
	1	2	3	4	5	6	7				1	2	3	4	5	6	7	8		
	3.1	3.5	3.5	0	6.3	12.0	8.4				0	0	0	−12.0	0	0	0	12.0		
REF. NO.	IC19L										IC7N									
	1	2	3	4	5	6	7				1	2	3	4	5	6	7	8		
	3.1	3.5	3.5	0	6.2	12.0	8.4				0.8	0.8	0.8	−12.0	0	0	0	12.0		
REF. NO.	IC10N																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	−0.4	5.2	12.0	0	0	0	−5.7	−0.6	−0.4	12.0	0	0	0.2	−5.7						
REF. NO.	IC15N																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0	5.2	12.0	0.7	0	0	−5.7	1.6	5.2	12.0	0	0	0.5	−5.7						

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

- POWER SW...ON.
- VIDEO INPUT CONNECTOR...PAL COLOUR BAR SIGNAL INPUT.

DIGITAL TRANSISTORs DC VOLTAGE CHART

REF. NO.	Q1			Q2			Q3			Q4			Q5			Q6		
	E	C	B	E	C	B	D	S	G	E	C	B	E	C	B	E	C	B
	0	11.8	0.1	12.0	0.4	11.8	12.0	6.2	2.4	1.9	11.3	2.5	1.9	11.3	0.2	12.0	5.1	11.3
REF. NO.	Q7			Q8			Q9			Q10			Q11			Q12		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	8.1	1.2	7.6	8.9	1.1	8.3	0	10.1	0.2	−0.2	−12.0	−0.9	−0.7	5.2	0	0.6	0.7	3.1
REF. NO.	Q13			Q14			Q15			Q16			Q17			Q18		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	5.2	12.0	5.7	−5.6	−12.0	−6.2	1.0	−11.4	1.0	−12.0	−2.1	−11.4	0.7	−6.2	0	0.7	5.1	1.4
REF. NO.	Q19																	
	D	S	G															
	12.0	7.7	3.3															

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

- POWER SW...ON.
- VIDEO INPUT CONNECTOR...PAL COLOUR BAR SIGNAL INPUT.

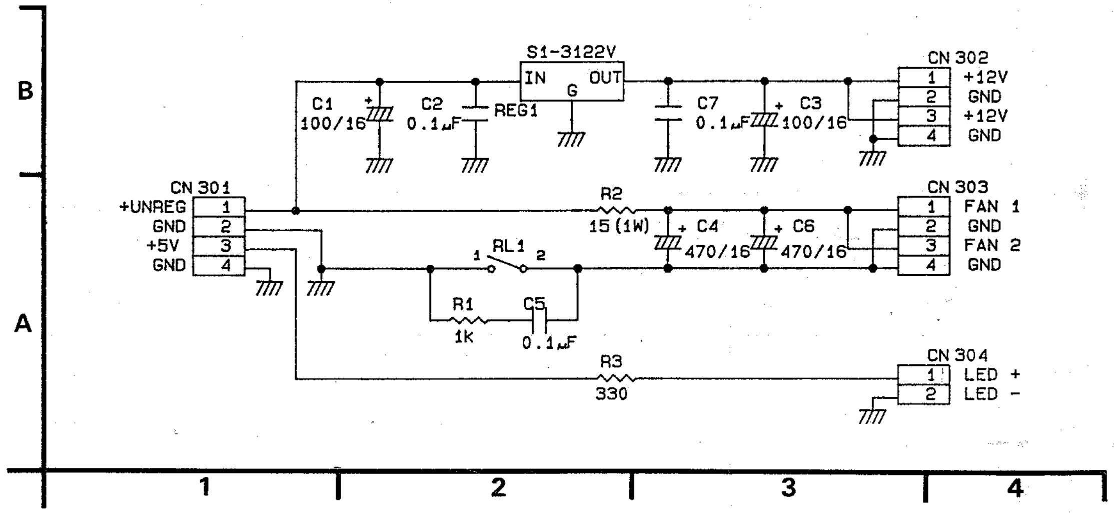
POWER SUPPLY IC DC VOLTAGE CHART

REF. NO.	REG 1		
	I	G	O
	12.9	0	12.0

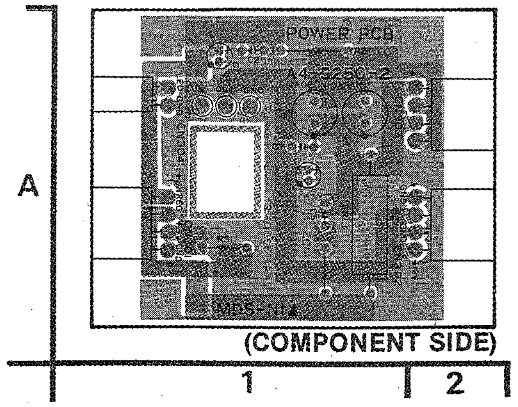
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

- POWER SW...ON.
- VIDEO INPUT CONNECTOR...PAL COLOUR BAR SIGNAL INPUT.

POWER SUPPLY SCHEMATIC DIAGRAM



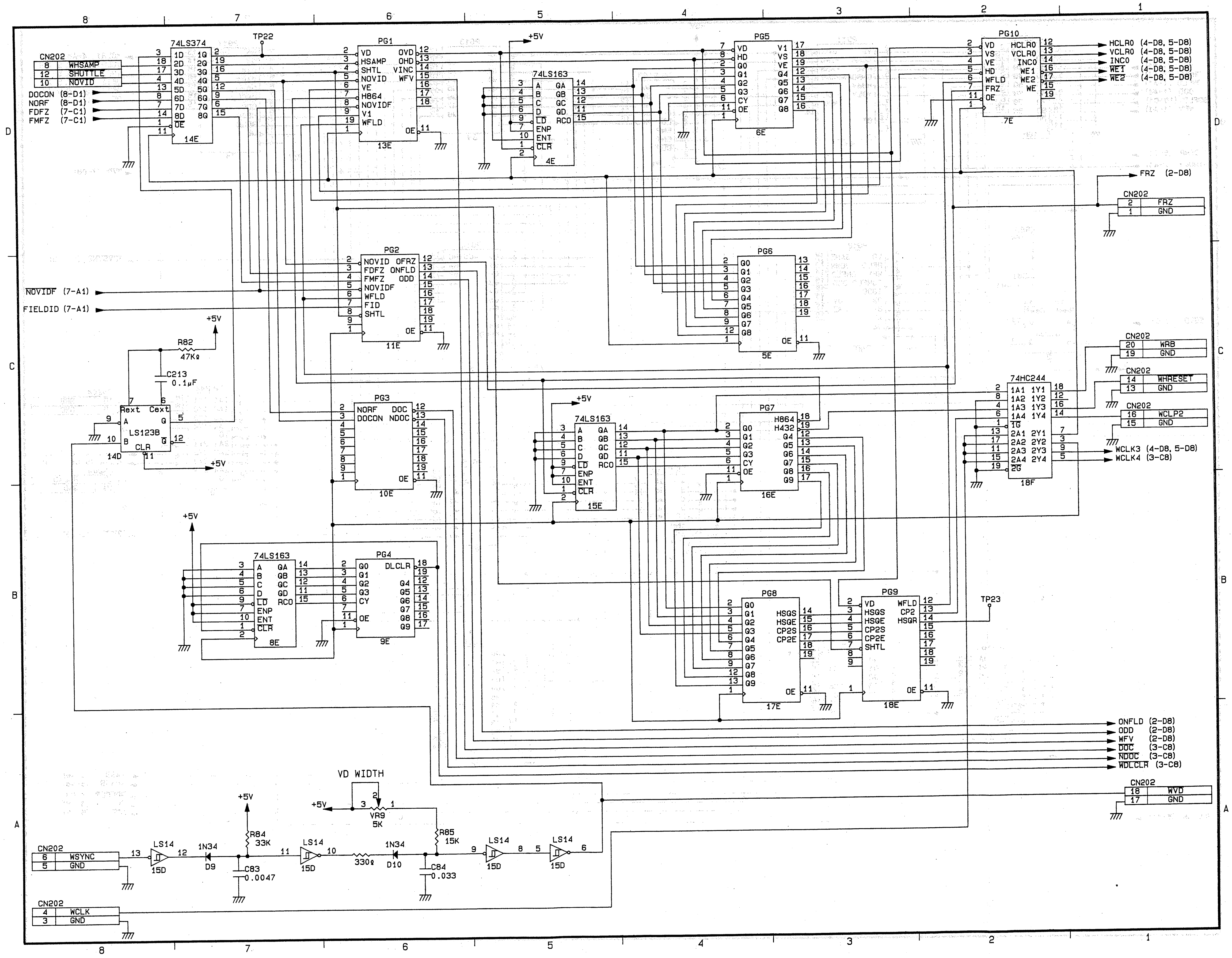
POWER SUPPLY P.C.Board (VEP61071A)



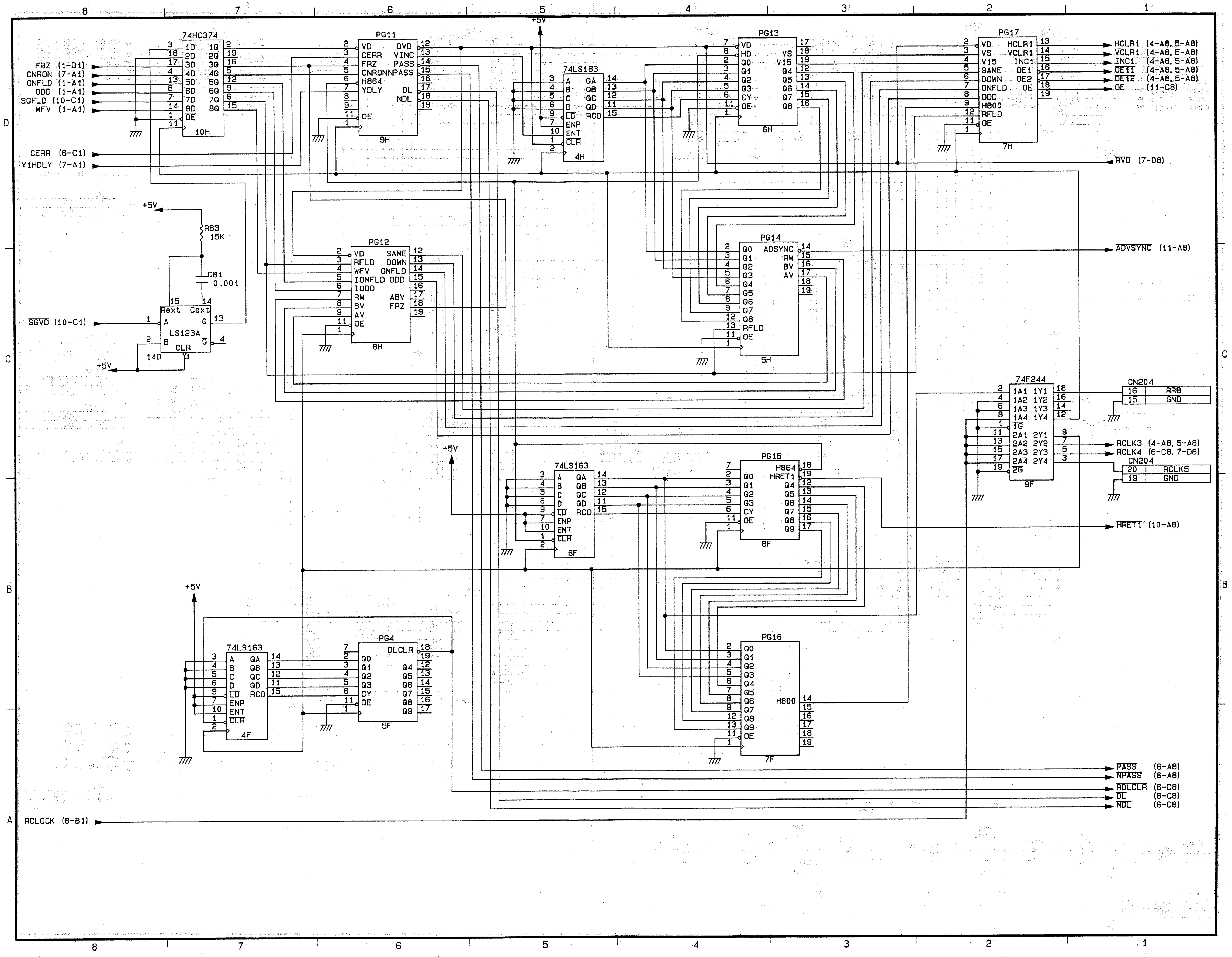
POWER SUPPLY C.B.A.	
Integrated Circuit	
REG 1	A-1
Connectors	
CN301	A-1
CN302	A-2
CN303	A-2
CN304	A-1

ADDRESS INFORMATION

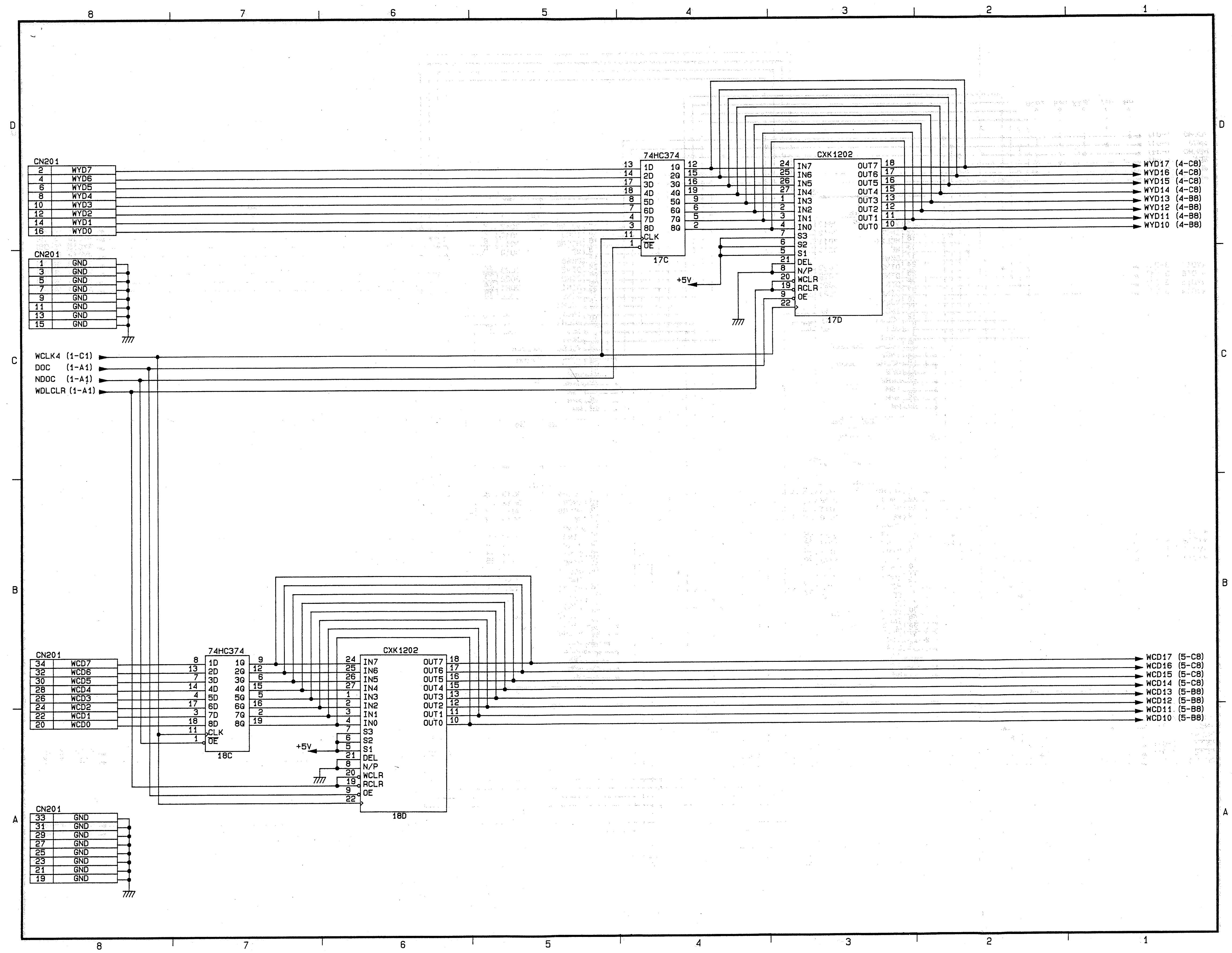
DIGITAL SCHEMATIC DIAGRAM (1/11)


CN202
WHSAMP
SHUTTLE
NOVID
DOCON (8-D1)
NORF (8-D1)
FDFZ (7-C1)
FMFZ (7-C1)
74LS374
14E
TP22
PG1
13E
74LS163
4E
+5V
PG5
6E
PG10
7E
HCLR0 (4-D8, 5-D8)
VCLR0 (4-D8, 5-D8)
INC0 (4-D8, 5-D8)
WE1 (4-D8, 5-D8)
WE2 (4-D8, 5-D8)
FRZ (2-D8)
FRZ
GND
PG2
11E
NOVIDF (7-A1)
FIELDID (7-A1)
PG6
5E
R82
47KΩ
C213
0.1μF
LS123B
14D
PG3
10E
74LS163
15E
PG7
16E
74HC244
18F
WRB
WHRESET
WCLP2
WCLK3 (4-D8, 5-D8)
WCLK4 (3-C8)
74LS163
8E
PG4
9E
PG8
17E
PG9
18E
TP23
ONFLD (2-D8)
ODD (2-D8)
WFV (2-D8)
DOC (3-C8)
NDOC (3-C8)
WDLCLR (3-C8)
VD WIDTH
VR9
5K
WVD
WSYNC
LS14
15D
1N34
D9
R84
33K
C83
0.0047
330Ω
D10
R85
15K
C84
0.033
WCLK
GND

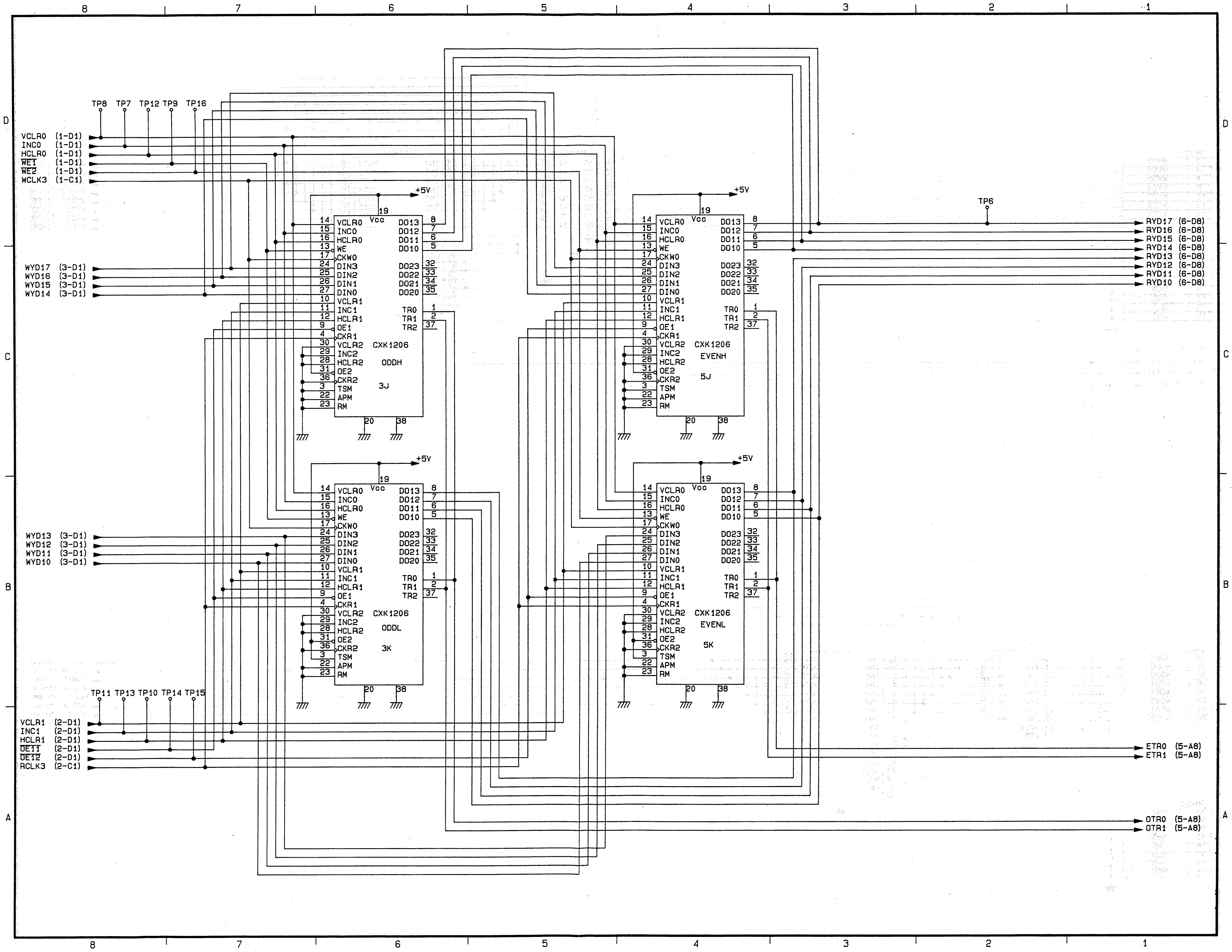
DIGITAL SCHEMATIC DIAGRAM (2/11)


8
7
6
5
4
3
2
1
D
C
B
A
FRZ (1-D1)
CNRON (7-A1)
ONFLD (1-A1)
ODD (1-A1)
SGFLD (10-C1)
WFV (1-A1)
CERR (6-C1)
Y1HDLY (7-A1)
SGVD (10-C1)
RCLOCK (8-B1)
74HC374
1D 2D 3D 4D 5D 6D 7D 8D OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
10H
PG11
VD CERR FRZ CNRON H864 YDLY OE
OVD VINC PASS NPASS DL NDL
9H
+5V
74LS163
A B C D LD ENP ENT CLR
QA QB QC QD RCO
4H
PG13
VD HD Q0 Q1 Q2 Q3 CY OE
VS V15 Q4 Q5 Q6 Q7 Q8
6H
PG17
VD VS V15 SAME DOWN ONFLD ODD H800 RFLD OE
HCLR1 VCLR1 INC1 OE1 OE2 OE
7H
HCLR1 (4-A8, 5-A8)
VCLR1 (4-A8, 5-A8)
INC1 (4-A8, 5-A8)
OE11 (4-A8, 5-A8)
OE12 (4-A8, 5-A8)
OE (11-C8)
RVD (7-D8)
R83
15K
C81
0.001
Rext Cext
A Q
LS123A
B Q̄
CLR
14D
PG12
VD RFLD WFV IONFLD IODD RW BV AV OE
SAME DOWN ONFLD ODD ABV FRZ
8H
PG14
Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 RFLD OE
ADSYNC RW BV AV
5H
ADVSYNC (11-A8)
74F244
1A1 1A2 1A3 1A4 1G 2A1 2A2 2A3 2A4 2G
1Y1 1Y2 1Y3 1Y4 2Y1 2Y2 2Y3 2Y4
9F
CN204
16 RRB
15 GND
RCLK3 (4-A8, 5-A8)
RCLK4 (6-C8, 7-D8)
CN204
20 RCLK5
19 GND
74LS163
A B C D LD ENP ENT CLR
QA QB QC QD RCO
6F
PG15
Q0 Q1 Q2 Q3 CY OE
H864 HRET1 Q4 Q5 Q6 Q7 Q8 Q9
8F
HRET1 (10-A8)
PG16
Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 OE
H800
7F
74LS163
A B C D LD ENP ENT CLR
QA QB QC QD RCO
4F
PG4
Q0 Q1 Q2 Q3 CY OE
DLCLR Q4 Q5 Q6 Q7 Q8 Q9
5F
PASS (6-A8)
NPASS (6-A8)
RDLCLR (6-D8)
DL (6-C8)
NDL (6-C8)

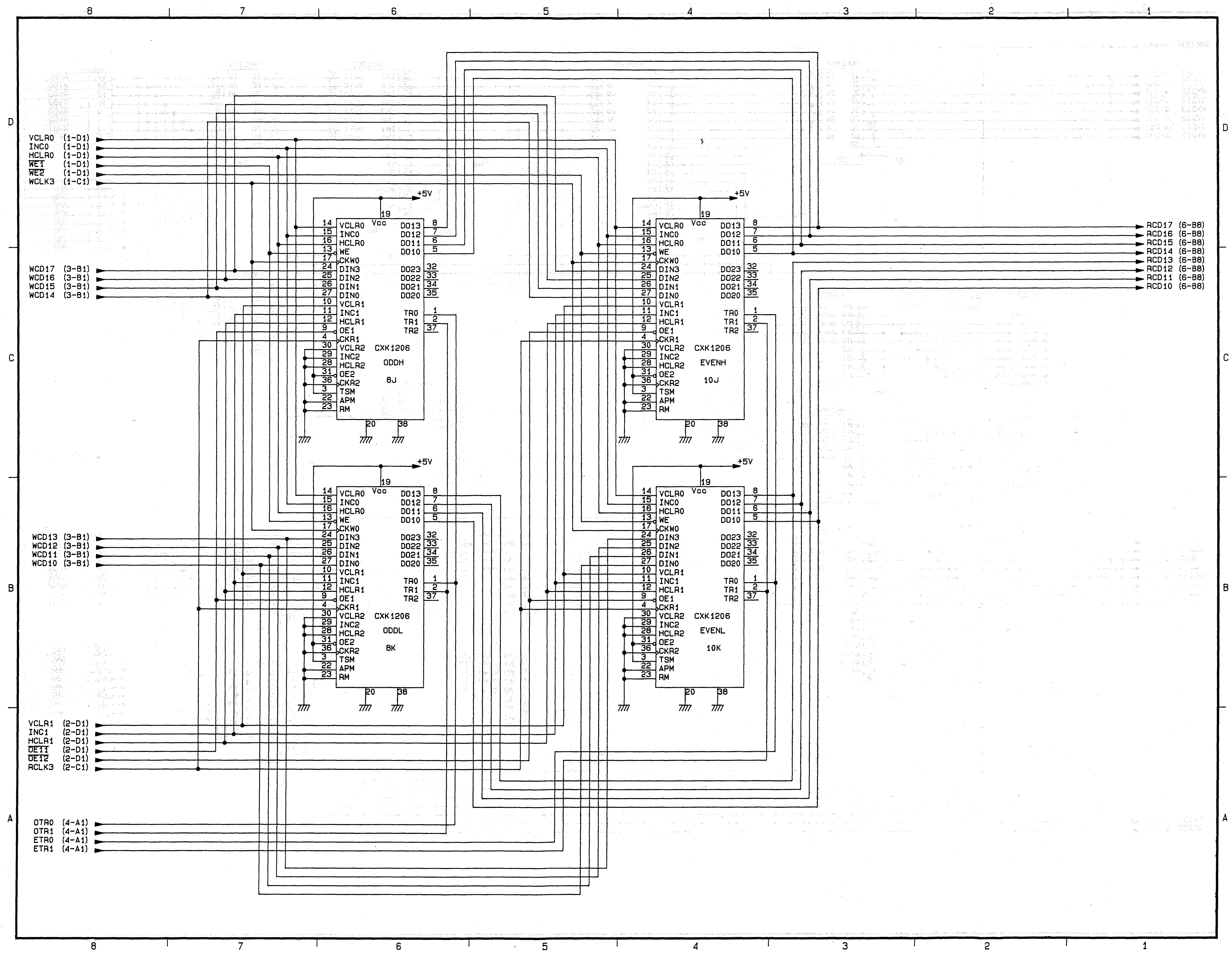
DIGITAL SCHEMATIC DIAGRAM (3/11)


8
7
6
5
4
3
2
1
D
C
B
A
CN201
2 WYD7
4 WYD6
6 WYD5
8 WYD4
10 WYD3
12 WYD2
14 WYD1
16 WYD0
CN201
1 GND
3 GND
5 GND
7 GND
9 GND
11 GND
13 GND
15 GND
WCLK4 (1-C1)
DOC (1-A1)
NDOC (1-A1)
WDLCLR (1-A1)
74HC374
1D 2D 3D 4D 5D 6D 7D 8D CLK OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
17C
CXK1202
IN7 IN6 IN5 IN4 IN3 IN2 IN1 IN0 S3 S2 S1 DEL N/P WCLR RCLR OE
OUT7 OUT6 OUT5 OUT4 OUT3 OUT2 OUT1 OUT0
17D
+5V
WYD17 (4-C8)
WYD16 (4-C8)
WYD15 (4-C8)
WYD14 (4-C8)
WYD13 (4-B8)
WYD12 (4-B8)
WYD11 (4-B8)
WYD10 (4-B8)
CN201
34 WCD7
32 WCD6
30 WCD5
28 WCD4
26 WCD3
24 WCD2
22 WCD1
20 WCD0
74HC374
18C
CXK1202
18D
+5V
WCD17 (5-C8)
WCD16 (5-C8)
WCD15 (5-C8)
WCD14 (5-C8)
WCD13 (5-B8)
WCD12 (5-B8)
WCD11 (5-B8)
WCD10 (5-B8)
CN201
33 GND
31 GND
29 GND
27 GND
25 GND
23 GND
21 GND
19 GND

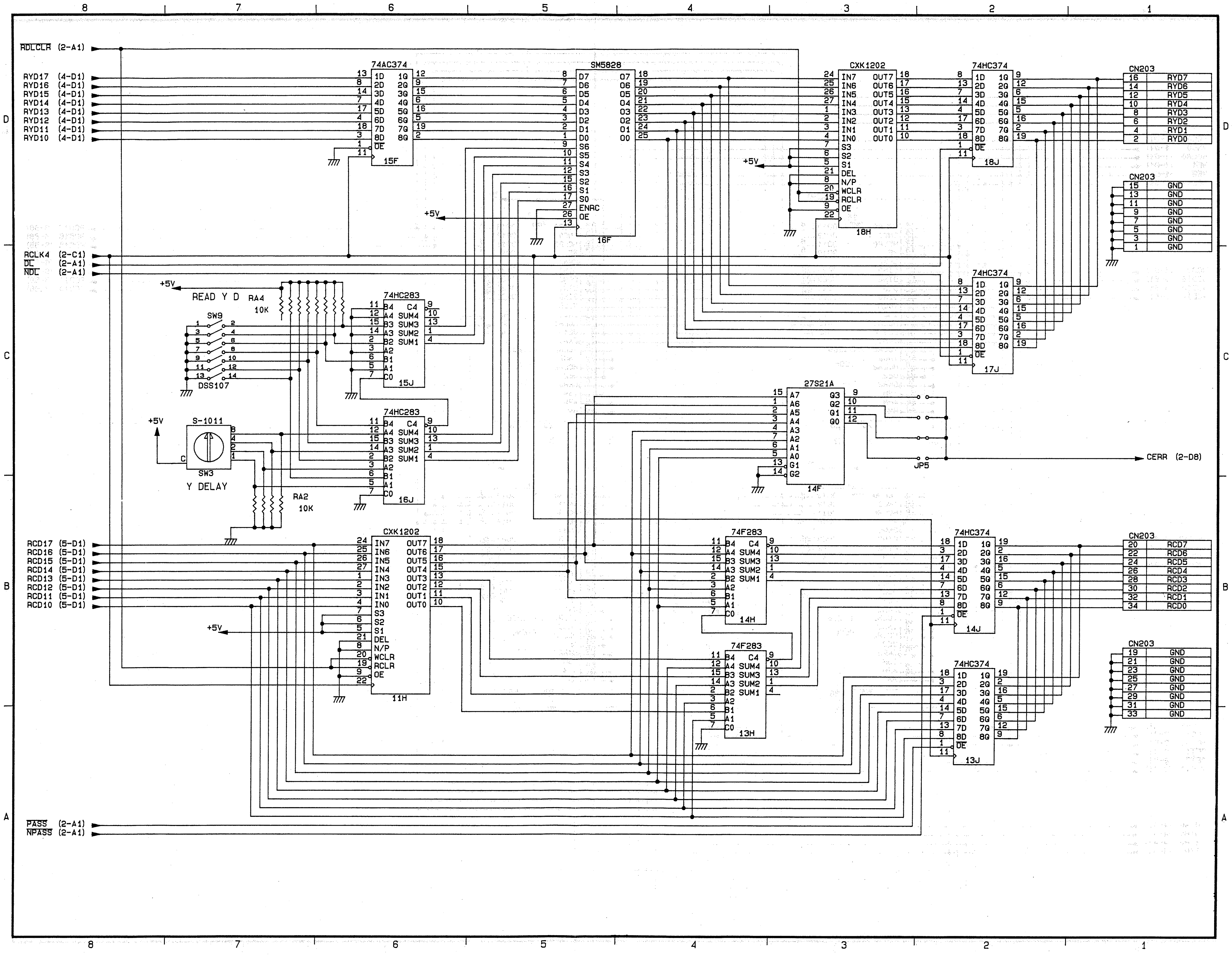
DIGITAL SCHEMATIC DIAGRAM (4/11)


8 7 6 5 4 3 2 1
D C B A
TP8 TP7 TP12 TP9 TP16
VCLR0 (1-D1)
INC0 (1-D1)
HCLR0 (1-D1)
WE1 (1-D1)
WE2 (1-D1)
WCLK3 (1-C1)
WYD17 (3-D1)
WYD16 (3-D1)
WYD15 (3-D1)
WYD14 (3-D1)
WYD13 (3-D1)
WYD12 (3-D1)
WYD11 (3-D1)
WYD10 (3-D1)
TP11 TP13 TP10 TP14 TP15
VCLR1 (2-D1)
INC1 (2-D1)
HCLR1 (2-D1)
OE11 (2-D1)
OE12 (2-D1)
RCLK3 (2-C1)
+5V
19 Vcc
VCLR0 INC0 HCLR0 WE CKW0 DIN3 DIN2 DIN1 DIN0 VCLR1 INC1 HCLR1 OE1 CKR1 VCLR2 INC2 HCLR2 OE2 CKR2 TSM APM RM
DO13 DO12 DO11 DO10 DO23 DO22 DO21 DO20 TR0 TR1 TR2
14 15 16 13 17 24 25 26 27 10 11 12 9 4 30 29 28 31 36 3 22 23
8 7 6 5 32 33 34 35 1 2 37
20 38
CXK1206
ODDH
3J
CXK1206
ODDL
3K
CXK1206
EVENH
5J
CXK1206
EVENL
5K
TP6
RYD17 (6-D8)
RYD16 (6-D8)
RYD15 (6-D8)
RYD14 (6-D8)
RYD13 (6-D8)
RYD12 (6-D8)
RYD11 (6-D8)
RYD10 (6-D8)
ETR0 (5-A8)
ETR1 (5-A8)
OTR0 (5-A8)
OTR1 (5-A8)

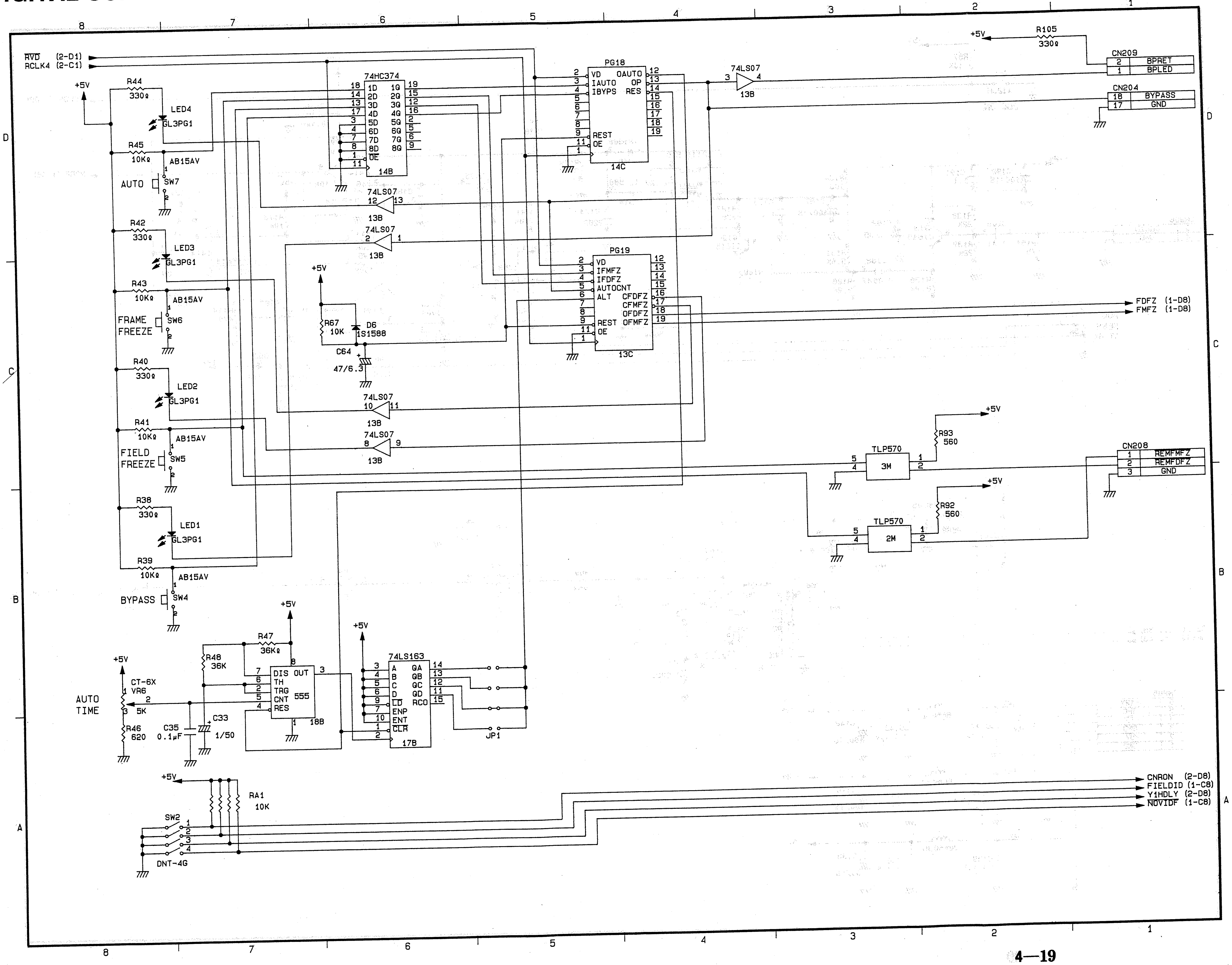
DIGITAL SCHEMATIC DIAGRAM (5/11)


8
7
6
5
4
3
2
1
D
C
B
A
VCLR0 (1-D1)
INC0 (1-D1)
HCLR0 (1-D1)
WE1 (1-D1)
WE2 (1-D1)
WCLK3 (1-C1)
WCD17 (3-B1)
WCD16 (3-B1)
WCD15 (3-B1)
WCD14 (3-B1)
WCD13 (3-B1)
WCD12 (3-B1)
WCD11 (3-B1)
WCD10 (3-B1)
VCLR1 (2-D1)
INC1 (2-D1)
HCLR1 (2-D1)
OE11 (2-D1)
OE12 (2-D1)
RCLK3 (2-C1)
OTR0 (4-A1)
OTR1 (4-A1)
ETR0 (4-A1)
ETR1 (4-A1)
RCD17 (6-B8)
RCD16 (6-B8)
RCD15 (6-B8)
RCD14 (6-B8)
RCD13 (6-B8)
RCD12 (6-B8)
RCD11 (6-B8)
RCD10 (6-B8)
+5V
19 Vcc
14 VCLR0
15 INC0
16 HCLR0
13 WE
17 CKW0
24 DIN3
25 DIN2
26 DIN1
27 DIN0
10 VCLR1
11 INC1
12 HCLR1
9 OE1
4 CKR1
30 VCLR2
29 INC2
28 HCLR2
31 OE2
36 CKR2
3 TSM
22 APM
23 RM
DO13 8
DO12 7
DO11 6
DO10 5
DO23 32
DO22 33
DO21 34
DO20 35
TR0 1
TR1 2
TR2 37
20
38
CXK1206
ODDH
8J
CXK1206
EVENH
10J
CXK1206
ODDL
8K
CXK1206
EVENL
10K

DIGITAL SCHEMATIC DIAGRAM (6/11)

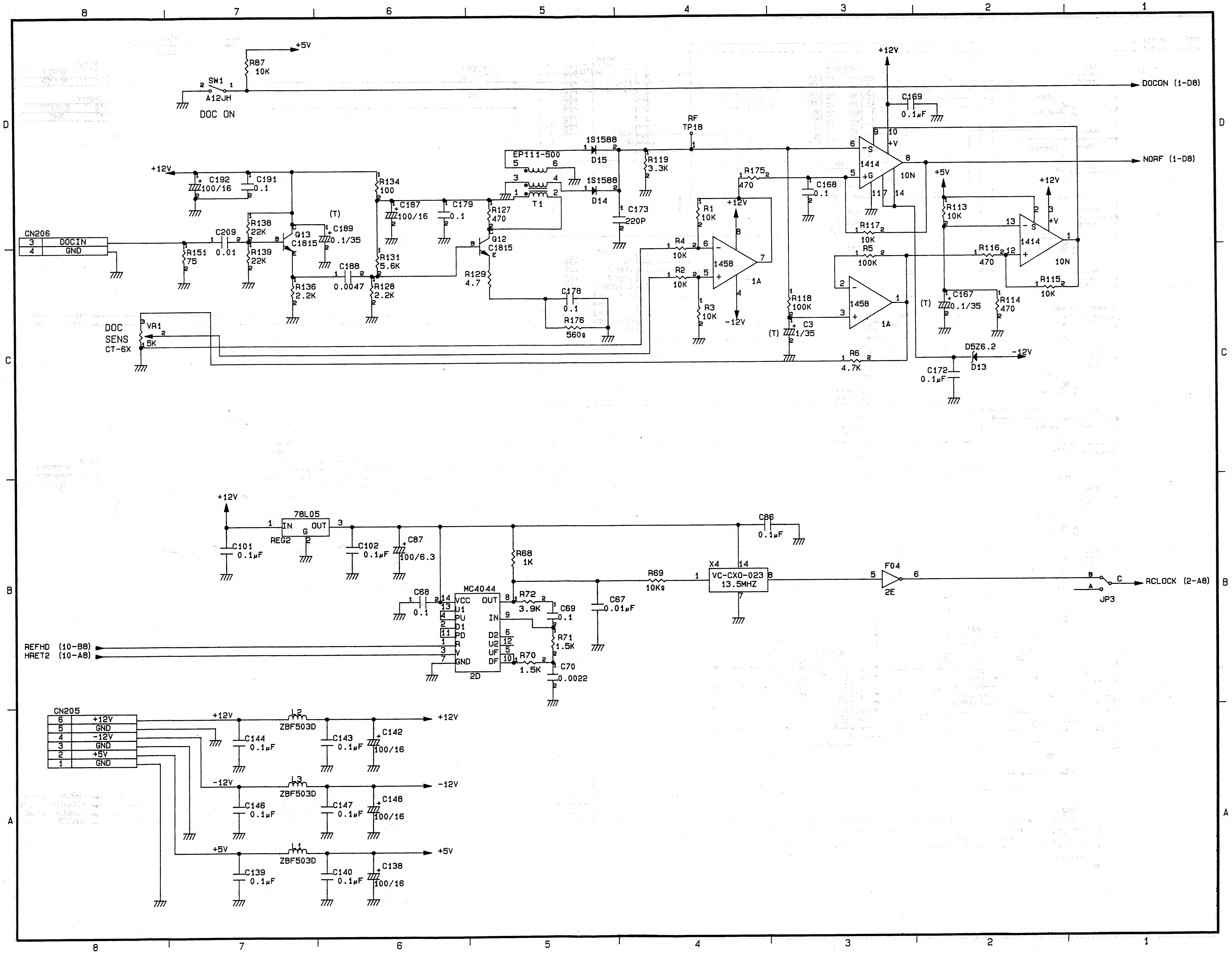

RDLCLR (2-A1)
RYD17 (4-D1)
RYD16 (4-D1)
RYD15 (4-D1)
RYD14 (4-D1)
RYD13 (4-D1)
RYD12 (4-D1)
RYD11 (4-D1)
RYD10 (4-D1)
74AC374
15F
SM5828
16F
CXK1202
18H
74HC374
18J
17J
CN203
RYD7
RYD6
RYD5
RYD4
RYD3
RYD2
RYD1
RYD0
GND
+5V
RCLK4 (2-C1)
OE (2-A1)
NOE (2-A1)
READ Y D
RA4
10K
SW9
DSS107
74HC283
15J
16J
S-1011
SW3
Y DELAY
RA2
10K
27S21A
14F
JP5
CERR (2-D8)
RCD17 (5-D1)
RCD16 (5-D1)
RCD15 (5-D1)
RCD14 (5-D1)
RCD13 (5-D1)
RCD12 (5-D1)
RCD11 (5-D1)
RCD10 (5-D1)
11H
74F283
14H
13H
14J
13J
RCD7
RCD6
RCD5
RCD4
RCD3
RCD2
RCD1
RCD0
PASS (2-A1)
NPASS (2-A1)
8
7
6
5
4
3
2
1
D
C
B
A

DIGITAL SCHEMATIC DIAGRAM (7/11)

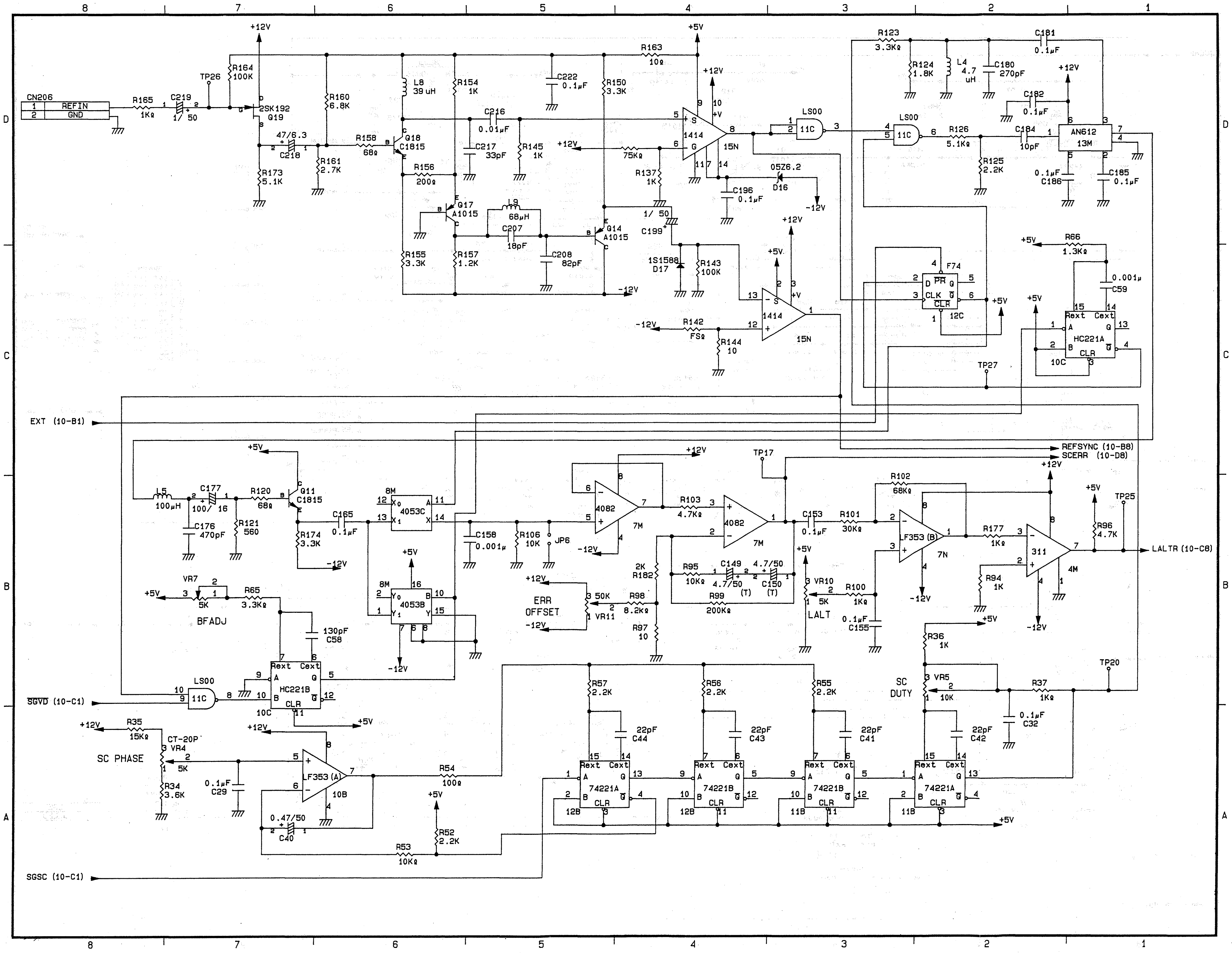


RVD (2-D1)
RCLK4 (2-C1)
74HC374
14B
PG18
14C
PG19
13C
74LS07
13B
74LS163
17B
555
18B
TLP570
3M
2M
R44 330Ω
LED4 GL3PG1
R45 10KΩ
AB15AV
AUTO SW7
R42 330Ω
LED3 GL3PG1
R43 10KΩ
FRAME FREEZE SW6
R40 330Ω
LED2 GL3PG1
R41 10KΩ
FIELD FREEZE SW5
R38 330Ω
LED1 GL3PG1
R39 10KΩ
BYPASS SW4
R67 10K
D6 1S1588
C64 47/6.3
R47 36KΩ
R48 36K
CT-6X VR6 5K
AUTO TIME
R46 620
C35 0.1μF
C33 1/50
JP1
RA1 10K
SW2
DNT-4G
R105 330Ω
CN209
BPRET
BPLED
CN204
BYPASS
GND
FDFZ (1-D8)
FMFZ (1-D8)
R93 560
R92 560
CN208
REMFMFZ
REMFDFZ
GND
CNRON (2-D8)
FIELDID (1-C8)
Y1HDLY (2-D8)
NOVIDF (1-C8)
+5V

DIGITAL SCHEMATIC DIAGRAM (8/11)

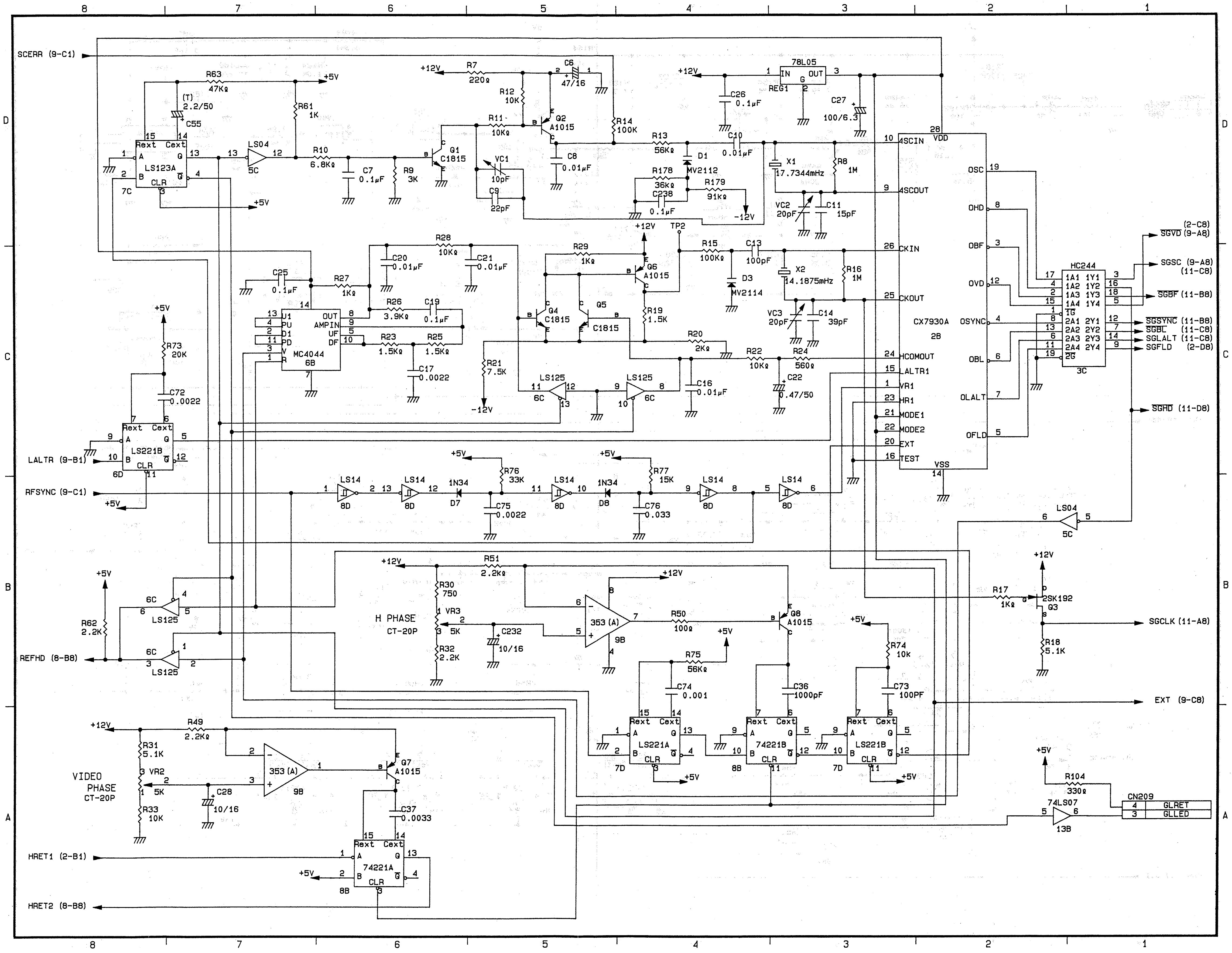

8
7
6
5
4
3
2
1
D
C
B
A
+5V
R87
10K
SW1
A12JH
DOC ON
DOCON (1-D8)
+12V
C169
0.1μF
RF
TP18
1S1588
D15
R119
3.3K
EP111-500
T1
1S1588
D14
C173
220P
1414
10N
NORF (1-D8)
R175
470
C168
0.1
+12V
C192
100/16
C191
0.1
R134
100
C187
100/16
C179
0.1
R127
470
Q12
C1815
R138
22K
Q13
C1815
(T)
C189
0.1/35
CN206
3 DOCIN
4 GND
C209
0.01
R151
75
R139
22K
C188
0.0047
R131
5.6K
R136
2.2K
R128
2.2K
R129
4.7
C178
0.1
R176
560Ω
R1
10K
R4
10K
R2
10K
R3
10K
1458
1A
-12V
R118
100K
C3
1/35
R117
10K
R5
100K
1458
1A
R6
4.7K
+5V
R113
10K
+12V
1414
10N
R116
470
R115
10K
C167
0.1/35
R114
470
DOC
SENS
CT-6X
VR1
5K
DSZ6.2
D13
-12V
C172
0.1μF
+12V
78L05
IN OUT
G
REG2
C101
0.1μF
C102
0.1μF
C87
100/6.3
C86
0.1μF
R68
1K
MC4044
VCC OUT
U1
PU
D1
PD
R
V
GND
IN
D2
U2
UF
DF
2D
C68
0.1
R72
3.9K
C69
0.1
R71
1.5K
R70
1.5K
C70
0.0022
C67
0.01μF
R69
10KΩ
X4
VC-CXO-023
13.5MHZ
F04
2E
JP3
RCLOCK (2-A8)
REFHD (10-B8)
HRET2 (10-A8)
CN205
6 +12V
5 GND
4 -12V
3 GND
2 +5V
1 GND
+12V
L2
ZBF503D
C144
0.1μF
C143
0.1μF
C142
100/16
-12V
L3
ZBF503D
C146
0.1μF
C147
0.1μF
C148
100/16
+5V
L1
ZBF503D
C139
0.1μF
C140
0.1μF
C138
100/16

DIGITAL SCHEMATIC DIAGRAM (9/11)

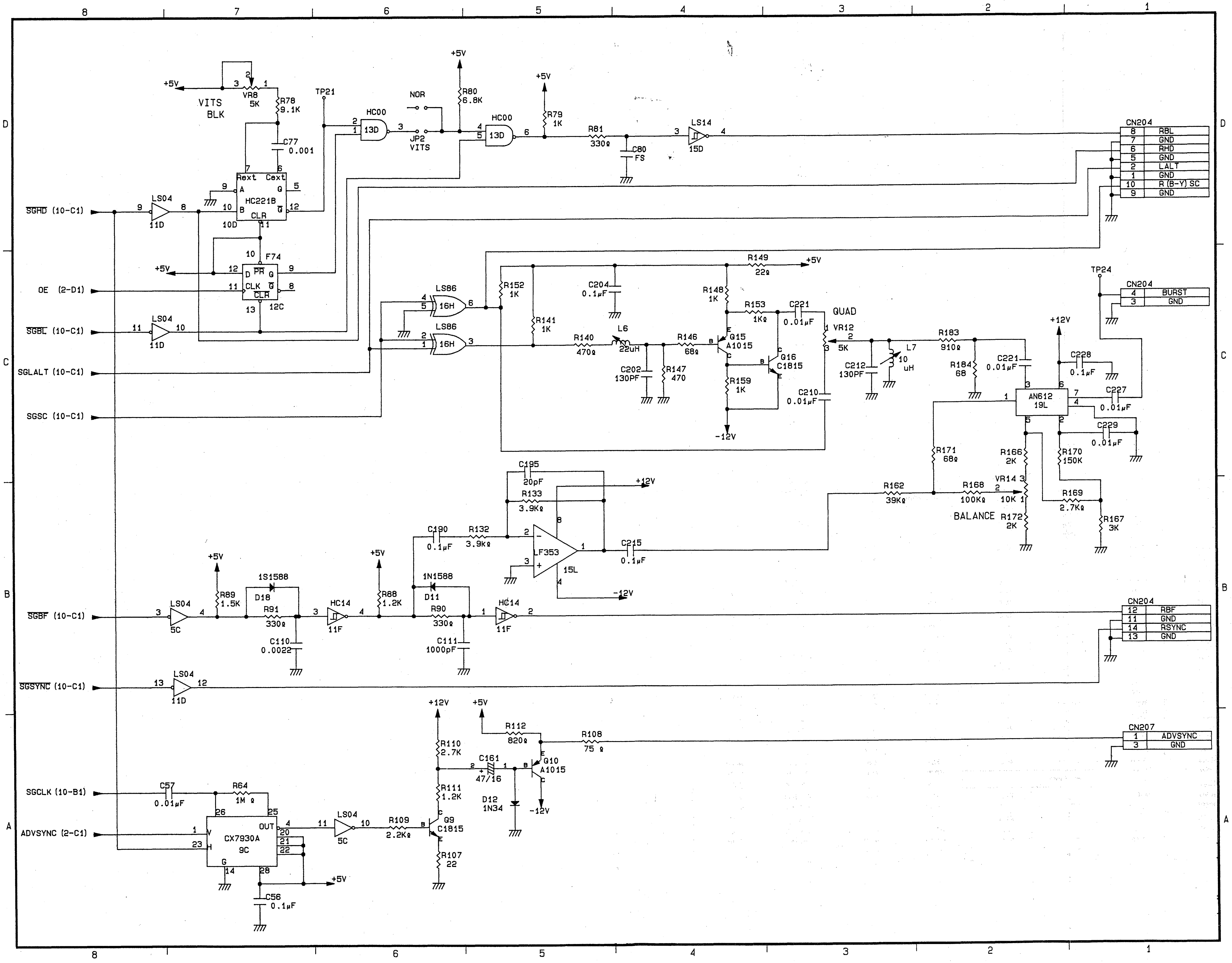


8
7
6
5
4
3
2
1
D
C
B
A
CN206
1 REFIN
2 GND
R165 1KΩ
C219 1/ 50
TP26
R164 100K
2SK192 Q19
+12V
47/6.3 C218
R173 5.1K
R160 6.8K
R161 2.7K
R158 68Ω
Q18 C1815
L8 39 uH
R156 200Ω
Q17 A1015
R155 3.3K
R154 1K
R157 1.2K
C216 0.01μF
C217 33pF
L9 68μH
C207 18pF
C208 82pF
R145 1K
C222 0.1μF
R150 3.3K
Q14 A1015
-12V
R163 10Ω
+5V
+12V
75KΩ
R137 1K
1/ 50 C199
1S1588 D17
R143 100K
1414 15N
C196 0.1μF
05Z6.2 D16
-12V
LS00 11C
R142 FSΩ
R144 10
R123 3.3KΩ
R124 1.8K
L4 4.7 uH
C180 270pF
C181 0.1μF
C182 0.1μF
R126 5.1KΩ
R125 2.2K
C184 10pF
AN612 13M
0.1μF C186
C185 0.1μF
F74 12C
D PR Q CLK CLR
R66 1.3KΩ
0.001μ C59
HC221A 10C
Rext Cext A B Q CLR
TP27
EXT (10-B1)
REFSYNC (10-B8)
SCERR (10-D8)
L5 100μH
C177 100/ 16
C176 470pF
R120 68Ω
R121 560
Q11 C1815
R174 3.3K
C165 0.1μF
8M 4053C
8M 4053B
C158 0.001μ
R106 10K
JP6
4082 7M
R103 4.7KΩ
TP17
ERR OFFSET
50K VR11
R98 8.2KΩ
R97 10
2K R182
R95 10KΩ
C149 4.7/50 (T)
C150 4.7/50 (T)
R99 200KΩ
C153 0.1μF
R101 30KΩ
R102 68KΩ
LF353 (B) 7N
VR10 5K LALT
R100 1KΩ
0.1μF C155
R177 1KΩ
311 4M
R94 1K
R96 4.7K
TP25
LALTR (10-C8)
VR7 5K BFADJ
R65 3.3KΩ
130pF C58
HC221B 10C
LS00 11C
SGVD (10-C1)
R35 15KΩ
CT-20P VR4 5K
SC PHASE
R34 3.6K
0.1μF C29
LF353 (A) 10B
0.47/50 C40
R54 100Ω
R52 2.2K
R53 10KΩ
SGSC (10-C1)
R57 2.2K
22pF C44
74221A 12B
R56 2.2K
22pF C43
74221B 12B
R55 2.2K
22pF C41
74221B 11B
R36 1K
VR5 10K SC DUTY
22pF C42
74221A 11B
R37 1KΩ
0.1μF C32
TP20

DIGITAL SCHEMATIC DIAGRAM (10/11)

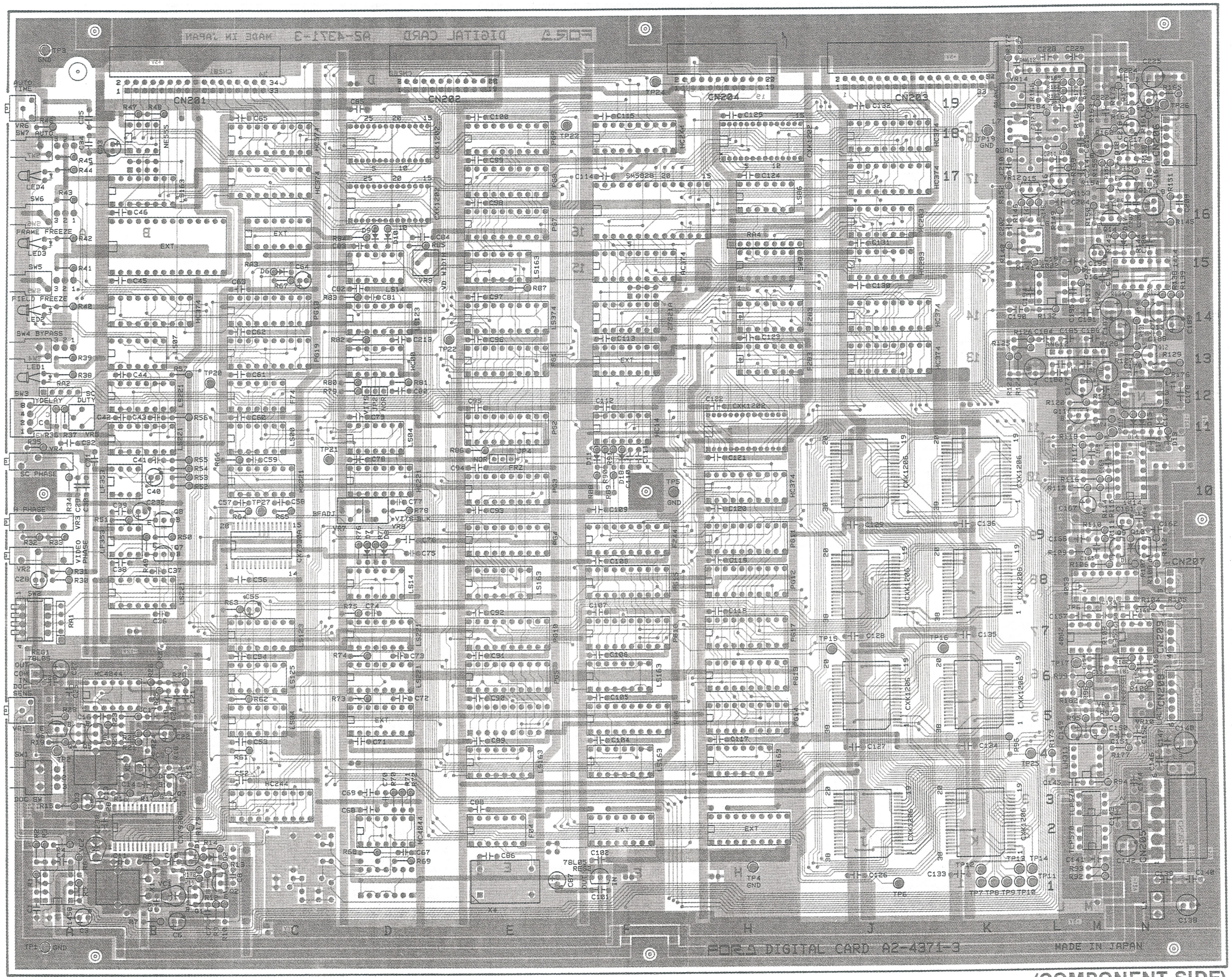

SCERR (9-C1)
LALTR (9-B1)
RFSYNC (9-C1)
REFHD (8-B8)
HRET1 (2-B1)
HRET2 (8-B8)
LS123A 7C
LS221B 6D
MC4044 6B
LS04 5C
LS125 6C
LS14 8D
1N34 D7
1N34 D8
Q1 C1815
Q2 A1015
Q4 C1815
Q5 C1815
Q6 A1015
Q7 A1015
Q8 A1015
Q3 2SK192
D1 MV2112
D3 MV2114
X1 17.7344mHz
X2 14.1875mHz
78L05 REG1
CX7930A 2B
HC244 3C
353 (A) 9B
LS221A 7D
74221B 8B
LS221B 7D
74221A 8B
74LS07 13B
H PHASE CT-20P
VIDEO PHASE CT-20P
VR2 5K
VR3 5K
TP2
4SCIN
4SCOUT
CKIN
CKOUT
HCOMOUT
LALTR1
VR1
HR1
MODE1
MODE2
EXT
TEST
VDD
VSS
OSC
OHD
OBF
OVD
OSYNC
OBL
OLALT
OFLD
(2-C8) SGVD (9-A8)
SGSC (9-A8) (11-C8)
SGBF (11-B8)
SGSYNC (11-B8)
SGBL (11-C8)
SGALT (11-C8)
SGFLD (2-D8)
SGHD (11-D8)
SGCLK (11-A8)
EXT (9-C8)
CN209
4 GLRET
3 GLLED
R63 47KΩ
C55 (T) 2.2/50
R61 1K
R7 220Ω
R12 10K
R11 10KΩ
R10 6.8KΩ
C7 0.1μF
R9 3K
C6 47/16
C8 0.01μF
VC1 10pF
C9 22pF
R14 100K
R13 56KΩ
C10 0.01μF
R178 36KΩ
R179 91KΩ
C238 0.1μF
C26 0.1μF
C27 100/6.3
R8 1M
VC2 20pF
C11 15pF
R28 10KΩ
C20 0.01μF
C21 0.01μF
C25 0.1μF
R27 1KΩ
R26 3.9KΩ
C19 0.1μF
R23 1.5KΩ
R25 1.5KΩ
C17 0.0022
R29 1KΩ
R15 100KΩ
C13 100pF
R16 1M
VC3 20pF
C14 39pF
R19 1.5K
R20 2KΩ
R21 7.5K
R22 10KΩ
R24 560Ω
C22 0.47/50
C16 0.01μF
R73 20K
C72 0.0022
R76 33K
R77 15K
C75 0.0022
C76 0.033
R62 2.2K
R51 2.2KΩ
R30 750
R32 2.2K
C232 10/16
R50 100Ω
R75 56KΩ
C74 0.001
C36 1000pF
R74 10K
C73 100PF
R17 1KΩ
R18 5.1K
R104 330Ω
R49 2.2KΩ
R31 5.1K
R33 10K
C28 10/16
C37 0.0033
+12V
+5V
-12V
8 7 6 5 4 3 2 1
D C B A

DIGITAL SCHEMATIC DIAGRAM (11/11)



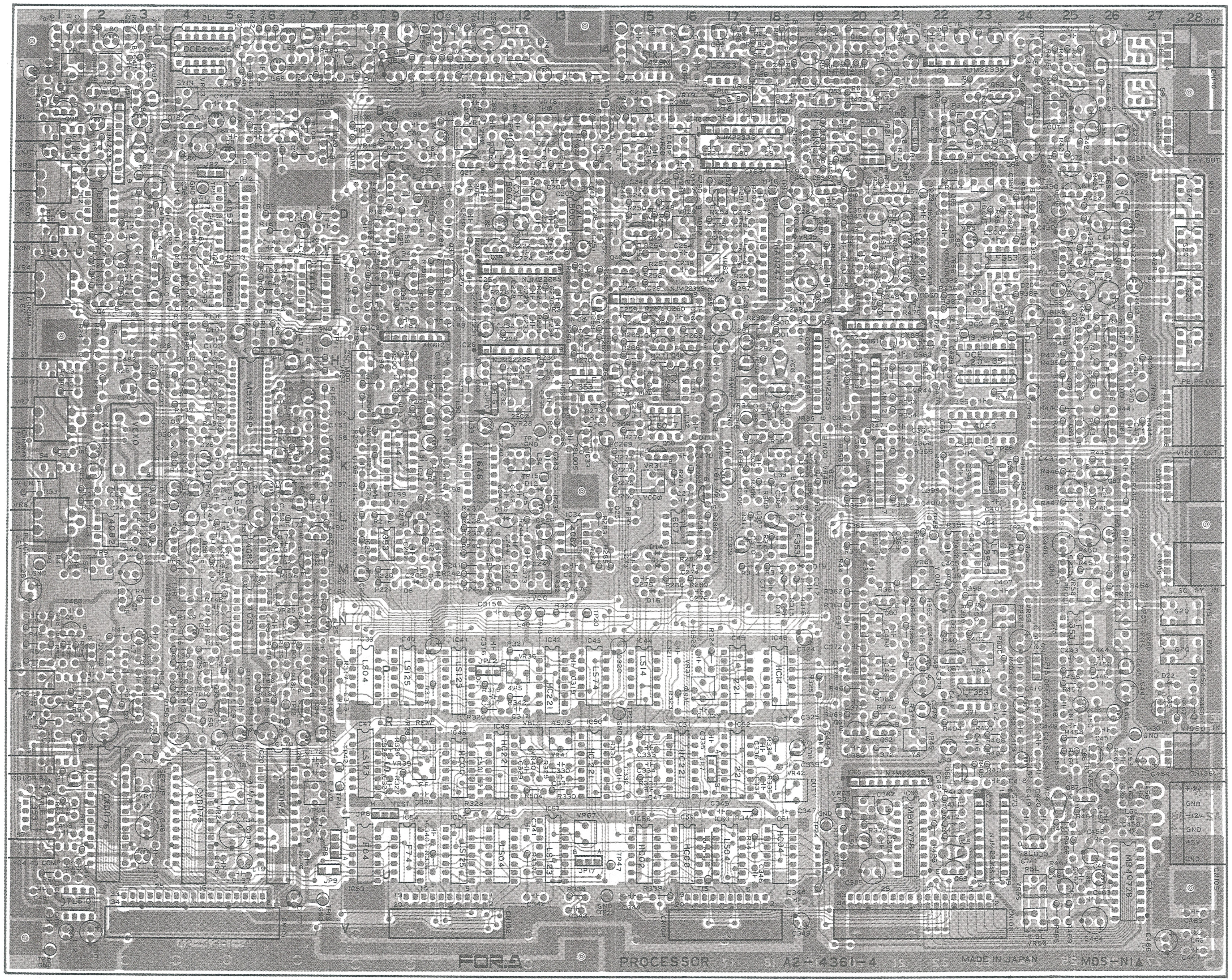
8
7
6
5
4
3
2
1
D
C
B
A
+5V
VR8
5K
VITS
BLK
R78
9.1K
C77
0.001
Rext
Cext
A
Q
HC221B
B
CLR
10D
TP21
HC00
13D
NOR
JP2
VITS
+5V
R80
6.8K
R79
1K
R81
330Ω
C80
FS
LS14
15D
CN204
8 RBL
7 GND
6 RHD
5 GND
2 LALT
1 GND
10 R (B-Y) SC
9 GND
SGHD (10-C1)
LS04
11D
F74
PR
CLK
CLR
D
12C
OE (2-D1)
SGBL (10-C1)
SGLALT (10-C1)
SGSC (10-C1)
LS86
16H
R152
1K
R141
1K
C204
0.1μF
R140
470Ω
L6
22uH
C202
130PF
R147
470
R146
68Ω
R148
1K
R149
22Ω
+5V
R153
1KΩ
C221
0.01μF
Q15
A1015
Q16
C1815
R159
1K
-12V
C210
0.01μF
QUAD
VR12
5K
C212
130PF
L7
10 uH
R183
910Ω
R184
68
TP24
CN204
4 BURST
3 GND
+12V
C221
0.01μF
C228
0.1μF
C227
0.01μF
AN612
19L
C229
0.01μF
R171
68Ω
R166
2K
R170
150K
VR14
10K
BALANCE
R172
2K
R162
39KΩ
R168
100KΩ
R169
2.7KΩ
R167
3K
C195
20pF
R133
3.9KΩ
+12V
C190
0.1μF
R132
3.9KΩ
LF353
15L
C215
0.1μF
-12V
1S1588
D18
R89
1.5K
R91
330Ω
C110
0.0022
HC14
11F
R88
1.2K
1N1588
D11
R90
330Ω
C111
1000pF
SGBF (10-C1)
LS04
5C
CN204
12 RBF
11 GND
14 RSYNC
13 GND
SGSYNC (10-C1)
+12V
+5V
R110
2.7K
R112
820Ω
R108
75 Ω
C161
47/16
Q10
A1015
D12
1N34
-12V
CN207
1 ADVSYNC
3 GND
SGCLK (10-B1)
ADVSYNC (2-C1)
C57
0.01μF
R64
1M Ω
CX7930A
9C
OUT
V
H
G
LS04
5C
R109
2.2KΩ
Q9
C1815
R111
1.2K
R107
22
C56
0.1μF
+5V

DIGITAL P.C.Board (VEP63044A)



(COMPONENT SIDE)

PROCESS P.C.Board (VEP63043A)


PROCESSOR
A2-4361-4
MADE IN JAPAN
MDS-NIA
VCXO
DCE20-35
NJM2285
NJM2235
LF353
4053
MB40778
78L009
LS04
LS125
LS123
LS74
LS14
HC221
HC04
HC00
F74
VIDEO OUT
SC SY IN
+5V
GND
+12V
GND
+5V
GND

(COMPONENT SIDE)

Process C.B.A.

Transistor	
Q1	A-1
Q2	A-3
Q3	E-3
Q4	F-2
Q5	F-1
Q6	N-1
Q7	P-2
Q8	R-1
Q9	R-3
Q10	A-8
Q11	A-8
Q12	A-10
Q13	A-11
Q14	A-14
Q15	A-18
Q16	C-18
Q17	D-18
Q18	B-4
Q19	B-6
Q20	C-7
Q21	C-11
Q22	C-13
Q23	B-14
Q24	H-4
Q25	B-21
Q26	E-4
Q27	M-4
Q28	M-4
Q29	P-4
Q30	P-4
Q31	L-7
Q32	M-7
Q33	P-7
Q34	R-7
Q35	C-10
Q36	E-9
Q37	E-10
Q38	J-9
Q39	E-11
Q40	H-11
Q41	L-12
Q42	M-11
Q43	C-14
Q44	C-16
Q45	E-15
Q46	E-14
Q47	F-15
Q48	H-16
Q49	H-15
Q50	K-15
Q51	L-16
Q52	C-17
Q53	C-19
Q54	F-19
Q55	J-18
Q56	K-19
Q57	D-21
Q58	E-21
Q59	L-21
Q60	N-21
Q61	R-20
Q62	R-21
Q63	C-22
Q64	C-24
Q65	D-22
Q66	D-24
Q67	P-22
Q68	S-23
Q69	U-23
Q70	A-24
Q71	B-25
Q72	C-25
Q73	D-25
Q74	E-25
Q75	E-26
Q76	F-25
Q77	F-26
Q78	H-25
Q79	J-26
Q80	J-25
Q81	J-26
Q82	K-25
Q83	K-26
Q84	M-25
Q85	R-27
Q86	S-26
Q87	T-26
Q88	B-19
Q90	A-5
Q91	B-2
Q92	B-1
Q93	B-23

Integrated Circuit	
IC1	B-3
IC2	G-2
IC3	L-2
IC4	T-1
IC5	S-3
IC6	U-2
IC7	A-15
IC8	A-17
IC9	A-22
IC10	B-17
IC11	C-17
IC12	C-5
IC13	F-5
IC14	H-5
IC15	M-5
IC16	N-5
IC17	S-4
IC18	E-7
IC19	J-6
IC20	S-6
IC21	F-9
IC22	K-9
IC23	M-8
IC24	C-12
IC25	E-11
IC26	H-11
IC27	K-11
IC28	D-13
IC29	F-15
IC30	H-13
IC31	H-16
IC32	J-16
IC33	K-14
IC34	L-13
IC35	L-16
IC36	D-19
IC37	H-19
IC38	L-19
IC39	P-8
IC40	P-9
IC41	P-10
IC42	P-13
IC43	P-14
IC44	P-15
IC45	P-17
IC46	P-18
IC47	R-8
IC48	S-10
IC49	R-11
IC50	R-14
IC51	R-16
IC52	R-17
IC53	U-8
IC54	T-9
IC55	T-10
IC56	T-11
IC57	T-13
IC58	T-15
IC59	T-16
IC60	T-17
IC61	T-18
IC62	F-20
IC63	H-20
IC64	K-20
IC65	S-21
IC66	S-21
IC67	E-23
IC68	J-23
IC69	K-23
IC70	M-23
IC71	R-23
IC72	T-23
IC73	T-24
IC74	U-25
IC75	N-25
IC76	U-27
IC77	D-7
IC78	D-8
IC79	D-8
IC80	D-8
IC81	D-9
IC82	D-9
IC83	D-5
IC84	D-6
IC85	D-6
IC86	D-7
IC87	D-7
IC88	D-7
IC89	D-8
IC91	D-8
IC92	D-9
IC93	D-9
IC94	C-5
IC95	C-5
IC96	C-6
IC97	C-7
IC98	C-7
IC99	C-8
IC100	C-8
IC101	C-8
IC102	C-9
IC103	C-9
IC104	B-5
IC105	B-6
IC106	B-6
IC107	B-7
IC108	B-7
IC109	B-7
IC110	B-8
IC111	B-8
IC112	B-9
IC113	A-5
IC114	A-6
IC115	A-6
IC116	A-7
IC117	A-7
IC118	A-8
IC119	A-8

Test Point	
TP1	B-2
TP2	C-3
TP3	M-1
TP4	S-3
TP5	V-1
TP6	A-10
TP7	A-14
TP8	B-3
TP9	C-5
TP10	R-4
TP11	H-7
TP12	R-6
TP13	V-7
TP14	J-12
TP15	K-12
TP16	C-3
TP17	F-5
TP18	J-17
TP19	N-13
TP20	N-14
TP21	R-14
TP22	V-14
TP23	D-22
TP24	T-20
TP25	L-22
TP26	K-23
TP27	L-24
TP28	C-27
TP29	J-27
TP30	R-27
TP31	L-4
TP32	A-8
TP33	G-10
TP34	E-11
TP35	B-11
TP36	A-11
TP37	C-9
TP38	B-5
TP39	B-8
TP40	K-4
TP41	T-8
TP42	S-8
TP43	D-9
TP44	B-12
TP45	B-14
TP46	H-19
TP47	U-14

Adjustment	
VR1	A-1
VR2	A-1
VR3	C-1
VR4	E-1
VR5	F-3
VR6	D-1
VR7	J-1
VR8	L-1
VR9	M-2
VR11	T-3
VR12	A-8
VR13	B-4
VR14	B-6
VR15	B-7
VR16	C-8
VR17	B-11
VR18	B-13
VR19	B-4
VR20	C-15
VR21	B-21
VR22	F-4
VR23	N-4
VR24	T-5
VR25	N-6
VR26	T-7
VR27	H-8
VR28	J-12
VR29	D-16
VR30	F-13
VR31	K-15
VR32	M-20
VR33	E-19
VR34	J-17
VR35	J-19
VR36	P-12
VR37	P-17
VR38	R-9
VR39	S-9
VR40	S-12
VR41	S-13
VR42	S-19
VR43	E-20
VR44	H-21
VR45	E-9
VR46	K-20
VR47	F-10
VR48	F-25
VR49	R-22
VR50	C-23
VR51	D-23
VR52	F-23
VR53	N-24
VR54	P-23
VR55	U-25
VR56	V-24
VR57	B-25
VR58	M-26
VR59	N-27
VR60	P-27
VR61	M-22
VR62	E-17
VR63	B-18
VR64	C-7
VR65	T-20
VR66	E-23
VR67	T-14
VR68	C-8
VR69	B-6
VR70	B-9
VR71	A-8
VR72	A-9
VR73	A-7
VR75	G-2
VR76	D-5
VC1	C-3
VC2	B-23
VC3	R-2
VC4	T-25
VC5	U-23
VC6	H-18
VC7	G-7
VC9	G-8
VC11	H-10
VC12	G-11
VC13	D-11
VC14	D-3

Connector	
CN2	A-3
CN3	A-4
CN4	A-9
CN5	A-8
CN6	A-6
CN101	V-6
CN102	V-12
CN103	V-23
CN104	V-16
CN105	U-28
CN106	S-28
CN107	K-28
CN108	M-28
CN109	B-28
CN110	A-28
CN111	J-28

ADDRESS INFORMATION

PROCESS ICs DC VOLTAGE CHART

REF. NO.	IC1										IC2									
	1	2	3	4	5	6	7	8	9		1	2	3	3	4	5	6	7	8	
	2.2	0	0.4	1.4	0	2.1	0	3.2	4.8		11.1	0.1	0.1	-12.0	-0.5	-0.5	-1.8	12.0		
REF. NO.	IC3										IC4									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
	-0.1	2.5	2.5	-12.0	0	0	0.5	5.0			4.2	0.1	0.1	-12.0	0.9	0.9	1.3	5.0		
REF. NO.	IC5																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	0	1.3	1.3	1.7	0.6	2.3	1.3	1.9	1.0	5.0	2.3	5.0	5.0	5.0	2.5	2.5	5.0	1.1	0
REF. NO.	IC5																			
	21	22	23	24																
	0	0.6	0.6	0																
REF. NO.	IC6										IC7									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6				
	0	5.0	5.0	1.2	-12.0	0.9	0.2	12.0			0.5	11.9	0	-5.2	0	-4.7				
REF. NO.	IC8										IC9									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	9	
	4.4	0	0	-12.0	-0.1	-0.1	-5.2	5.2			0	11.9	0	6.6	0	7.4	0	7.4	0	
REF. NO.	IC10										IC11									
	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8	9	
	0	11.9	0	6.7	0	7.4	0	7.4	0		8.3	0	8.3	5.1	0	8.3	0	0	0	
REF. NO.	IC12																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	0	-1.2	-1.2	-1.8	0	-12.0	0	5.1	0	5.2	-0.6	0	0	0	5.2				
REF. NO.	IC13																			
	1	2	3	4	5	6	7	8												
	-2.8	-0.6	-0.6	-12.0	-1.2	-1.2	-1.2	5.2												
REF. NO.	IC14																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2.8	2.5	2.3	2.4	2.9	2.9	4.2	3.0	2.4	2.7	3.0	2.6	3.3	0	2.9	5.0	2.9	0	4.2	2.2
REF. NO.	IC14																			
	21	22	23	24	25	26	27	28	29	30										
	2.2	4.2	2.3	2.7	5.0	4.5	2.9	2.5	2.1	4.1										
REF. NO.	IC15																			
	1	2	3	4	5	6	7	8												
	1.1	1.4	1.4	-12.0	1.4	1.4	1.1	5.2												
REF. NO.	IC16																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1.6	1.4	0	0	0	0	-12.0	0	0	0.2	0.2	1.4	1.6	1.4	1.4	5.2				
REF. NO.	IC17																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.0	0	1.4	1.3	1.1	1.3	1.2	1.0	1.3	2.5	5.2	2.3	5.2	5.2	5.2	2.6	2.6	5.2	1.6	0
REF. NO.	IC17																			
	21	22	23	24																
	0	0.7	0.7	0																
REF. NO.	IC18																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	-0.5	5.2	12.0	0	-1.8	-0.6	-5.1	-0.2	5.2	11.9	0	0	0	-5.1						
REF. NO.	IC19																			
	I	G	O																	
	11.9	0	5.0																	
REF. NO.	IC20																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	1.0	0	1.5	1.3	1.1	1.3	1.3	1.0	1.3	2.5	5.2	2.3	5.2	5.2	5.2	2.6	2.6	5.2	1.6	0
REF. NO.	IC20																			
	21	22	23	24																
	0	0.7	0.7	0																
REF. NO.	IC21																			
	1	2	3	4	5	6	7													
	3.1	3.5	3.5	0	6.2	11.9	0													
REF. NO.	IC22																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	2.0	5.2	11.9	0	1.0	1.7	-5.1	-0.5	5.2	11.9	0	0	0	-5.1						
REF. NO.	IC23										IC24									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
	5.2	3.4	5.2	0	3.4	2.2	2.7	5.2			0	5.2	2.5	9.1	5.9	5.1	2.2	2.5		
REF. NO.	IC25										IC26									
	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8	9	
	2.7	1.9	0	2.8	0	3.3	5.2	3.7	3.6		2.7	2.2	0	2.7	0	3.3	5.2	3.7	0	
REF. NO.	IC27																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	5.2	0	4.0	0	1.4	0	0	0	0	1.6	0	1.6	0	5.2						

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.
- POWER SW...ON.
- VIDEO INPUT CONNECTOR...PAL COLOUR BAR SIGNAL INPUT.

PROCESS ICs DC VOLTAGE CHART

REF. NO.	IC28																			
	1	2	3	4	5	6	7	8												
	0	5.2	2.6	9.1	2.0	2.2	5.1	5.9												
REF. NO.	IC29										IC30									
	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8		
	0	11.9	0	0	0	7.3	0	7.4	0		-3.3	0	0	-12.0	1.2	1.3	0	5.2		
REF. NO.	IC31										IC32									
	1	2	3	4	5	6					1	2	3	4	5	6	7	8		
	0.6	11.9	0	-3.3	0	-3.2					0	0	5.2	0	-12.0	-3.5	0	5.2		
REF. NO.	IC33										IC34									
	I	G	O								1	2	3	4	5	6	7	8		
	11.9	0	5.0								-3.0	0	0	-12.0	-0.7	-0.7	0	5.2		
REF. NO.	IC35																			
	1	2	3	4	5	6	7	8												
	0	4.6	0.2	-0.7	-12.0	2.8	-0.6	11.9												
REF. NO.	IC36																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	7.0	6.9	6.9	6.9	11.3	3.6	0	0.1	-0.1	0	0	4.4	5.5	4.4	6.0	11.9	10.0	5.9	3.4	7.0
REF. NO.	IC37										IC38									
	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8		
	0	11.9	0	6.7	0	7.4	2.6	7.4	0		1.8	2.0	1.9	0	1.2	1.2	11.1	11.9		
REF. NO.	IC39																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	-2.0	3.5	3.5	0.4	0.5	4.0	0	0.1	1.3	0.1	1.3	4.5	0.1	5.2						
REF. NO.	IC40																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.7	0.5	0	5.2	0	5.2	0	5.2	0	2.7	5.0	4.6	0.2	5.2						
REF. NO.	IC41																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	1.3	5.2	0.2	0.2	0	1.2	0	0	-0.5	5.2	4.6	4.6	0	0.6	5.2				
REF. NO.	IC42																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	3.5	5.2	5.2	4.9	0.3	0	5.0	0	0.3	5.2	5.2	5.0	0.3	0	4.9	5.2				
REF. NO.	IC43																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	0.3	0.3	3.5	5.2	0.3	4.4	0	2.4	2.0	5.2	5.2	5.2	5.2	5.2						
REF. NO.	IC44																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.4	0.1	1.5	0.1	1.4	0.1	0	5.1	0.1	0.3	5.1	3.6	1.5	5.2						
REF. NO.	IC45																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0	0	5.2	2.0	1.3	1.5	0	0	1.8	5.2	5.2	1.0	1.8	1.5	0.6	5.2				
REF. NO.	IC46																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.5	3.9	0	5.2	0	5.2	0	4.8	0.4	4.8	0.5	0.5	4.8	5.2						
REF. NO.	IC47																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	3.5	5.2	5.2	0.6	4.6	0	1.4	0	3.5	5.2	5.2	0.1	4.0	0	1.5	5.2				
REF. NO.	IC48																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.6	4.8	0.4	4.6	0.2	5.1	0	0.1	5.2	5.2	0	5.2	5.0	5.2						
REF. NO.	IC49																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	4.7	5.2	5.2	4.8	0	0	5.2	0	0	0	0	5.2	0.4	0	5.0	5.2				
REF. NO.	IC50																			
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16					
	0	0.3	5.2	1.7	0	0	5.1	0	5.1	5.2	5.2	5.2	3.6	0	2.7	5.2				
REF. NO.	IC51																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0.1	5.2	5.2	5.1	0.1	0	4.9	0	0	3.5	5.2	5.2	0.2	0	4.9	5.2				
REF. NO.	IC52																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	1.3	5.2	5.2	1.0	1.0	1.5	1.0	0	1.2	5.2	5.2	1.0	1.2	1.5	0.7	5.2				
REF. NO.	IC53																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	2.2	1.9	2.2	2.1	2.1	2.3	0	4.8	0	4.8	0	2.2	1.9	5.2						
REF. NO.	IC54																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	5.2	2.5	2.1	5.2	0.7	0.9	0	0.1	4.7	0	0	0	2.1	5.2						
REF. NO.	IC55																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.7	0.5	0.1	0.2	3.5	3.5	0	3.5	3.5	4.7	0.2	-0.4	0.2	5.2						

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.
- POWER SW...ON.
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PROCESS ICs DC VOLTAGE CHART

REF. NO.	IC56																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	5.2	0.2	0.3	4.6	0.2	4.7	0	0.2	5.1	4.7	0.2	0.1	1.3	5.2						
REF. NO.	IC57																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	0.2	5.2	5.2	0.2	4.6	0	0.8	0	0.2	5.2	5.2	0.2	4.6	0	1.2	5.2				
REF. NO.	IC58																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.9	0.4	0	1.1	3.3	3.2	0	3.0	1.8	0.9	0	0	5.2	5.2						
REF. NO.	IC59																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	4.6	5.2	0.2	3.4	1.8	3.3	0	3.0	3.3	3.4	0.1	4.6	4.7	5.2						
REF. NO.	IC60																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.8	1.8	1.8	1.5	1.5	1.8	0	1.5	1.8	3.4	1.5	3.5	1.5	5.2						
REF. NO.	IC61																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
	1.6	3.3	1.0	2.9	0.1	5.2	0	3.3	1.7	1.7	3.4	3.5	0	5.2						
REF. NO.	IC62										IC63									
	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7			
	8.3	3.3	0	0	0	8.3	0	7.5	11.9		3.1	3.5	3.5	0	6.2	11.9	8.6			
REF. NO.	IC64										IC65									
	1	2	3	4	5	6	7				1	2	3	4	5	6	7	8	9	
	3.1	3.5	3.5	0	6.2	11.9	8.5				0	9.2	0	3.6	0	4.1	4.0	4.3	0	
REF. NO.	IC66																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
	0	5.2	2.7	4.0	5.1	4.3	5.1	5.2	0	3.3	1.0	2.0	1.5	2.3	0.7	2.7	1.8	2.3		
REF. NO.	IC67																			
	1	2	3	4	5	6	7	8												
	−5.0	−0.3	−0.3	−12.0	0.3	1.5	1.5	5.2												
REF. NO.	IC68																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
	3.1	3.1	0.5	0.4	0.4	0	0	0	0.7	10.9	10.9	3.1	3.1	3.1	3.1	11.9				
REF. NO.	IC69										IC70									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
	3.5	3.1	3.1	−12.0	3.7	3.5	3.1	11.9			3.6	3.1	3.1	−12.0	3.8	3.6	3.1	11.9		
REF. NO.	IC71										IC72									
	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	9	
	−0.5	0	0	−12.0	3.8	3.8	−0.7	11.9			0.1	9.2	0.1	3.9	0	4.6	0.8	4.6	0.1	
REF. NO.	IC73										IC74									
	1	2	3	4	5	6	7	8	9		I	G	O							
	0.1	0.1	0.1	3.8	0	4.6	1.1	4.6	0.1		11.9	0	9.2							
REF. NO.	IC75																			
	1	2	3	4	5	6	7	8												
	−0.6	3.7	3.7	−12.0	0	0	0	11.9												
REF. NO.	IC76																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
	0	5.2	2.7	4.0	5.1	4.6	5.1	5.2	0	3.3	3.0	2.3	2.3	2.2	2.3	2.0	2.8	2.9		

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

- POWER SW…ON.
- VIDEO INPUT CONNECTOR…PAL COLOUR BAR SIGNAL INPUT.

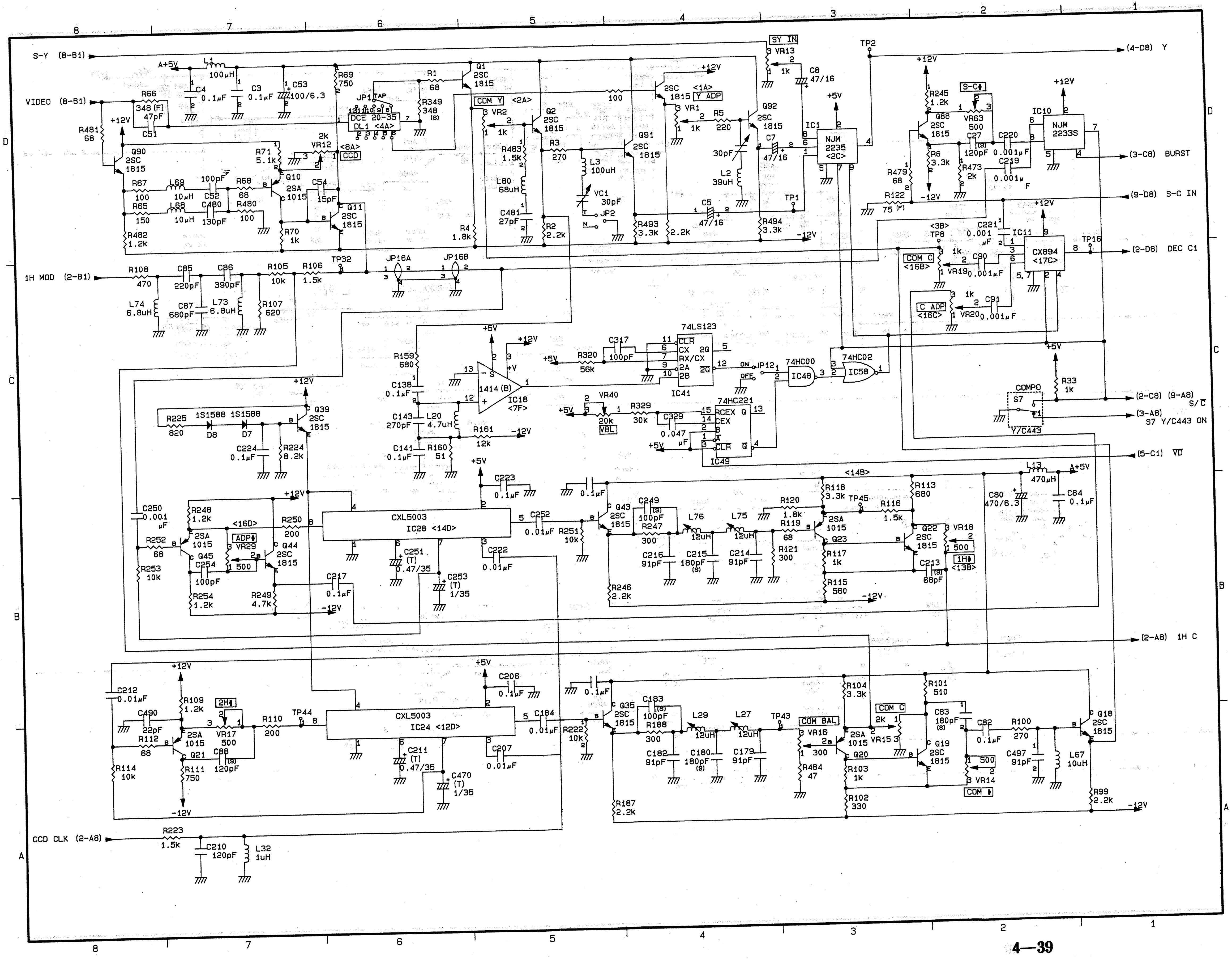
PROCESS TRANSISTORs DC VOLTAGE CHART

REF. NO.	Q1			Q2			Q3			Q4			Q5			Q6		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−0.9	5.0	−0.2	−1.4	5.0	−0.8	11.9	0.6	11.3	−0.8	11.3	−0.2	−0.8	5.0	−0.2	−0.6	4.3	0
REF. NO.	Q7			Q8			Q9			Q10			Q11			Q12		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	5.0	0	4.3	0.7	4.3	1.3	5.0	1.1	4.3	0.5	−11.4	0	−12.0	0.2	−11.4	5.1	0	4.5
REF. NO.	Q13			Q14			Q15			Q16			Q17			Q18		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−0.7	4.5	−0.1	−0.2	5.1	0.5	5.1	1.1	4.5	−0.5	5.1	−0.1	−0.5	4.5	0	−0.6	5.1	0
REF. NO.	Q19			Q20			Q21			Q22			Q23			Q24		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−8.4	0	−7.7	0.3	−7.7	−0.3	5.8	−8.1	5.3	−6.5	−0.8	−5.8	0.2	−5.8	−0.4	−7.1	0.2	−6.5
REF. NO.	Q25			Q26			Q27			Q28			Q29			Q30		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0	5.1	0.2	−0.6	−1.2	−1.9	0.2	4.5	0.7	5.2	0.1	4.5	0.5	4.5	1.1	5.2	1.6	4.5
REF. NO.	Q31			Q32			Q33			Q34			Q35			Q36		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0.3	4.5	0.7	5.2	0.2	4.5	0.5	4.5	1.1	5.2	1.6	4.5	−0.8	5.1	−0.1	−0.6	4.5	0
REF. NO.	Q37			Q38			Q39			Q40			Q41			Q42		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	5.2	0.6	4.5	0.6	−12.0	0	9.1	11.9	9.8	3.5	8.6	4.1	0	0	0.7	0	1.6	0.1
REF. NO.	Q43			Q44			Q45			Q46			Q47			Q48		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−0.8	5.1	−0.1	5.3	11.9	5.9	5.8	0	5.3	−0.7	1.8	1.8	−0.7	4.5	−0.1	5.2	1.2	4.5
REF. NO.	Q49			Q50			Q51			Q52			Q53			Q54		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0	5.2	0.6	3.7	1.1	3.1	2.3	−12.0	−0.8	0.6	−8.4	0.1	0.3	−6.5	−0.3	−0.7	11.9	−0.1
REF. NO.	Q55			Q56			Q57			Q58			Q59			Q60		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0.6	−7.4	0	0	10.9	−0.3	−0.1	5.1	0.2	−0.6	5.1	0	−12.0	−5.1	−11.3	0.1	−11.3	−0.5
REF. NO.	Q61			Q62			Q63			Q64			Q65			Q66		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−12.0	−1.1	−11.3	4.2	0.1	3.6	−4.4	−12.0	−5.0	−0.8	5.2	−0.2	−1.3	4.5	−0.8	4.6	0	4.5
REF. NO.	Q67			Q68			Q69			Q70			Q71			Q72		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	0.1	−12.0	−0.6	11.9	5.8	11.3	4.0	11.3	4.6	−11.9	−3.9	−11.2	0.5	−11.2	0	0.5	−11.2	0
REF. NO.	Q73			Q74			Q75			Q76			Q77			Q78		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	−11.9	0	−11.2	−5.6	4.5	−5.0	5.2	0	4.5	−5.6	4.4	0	5.1	0	4.4	−5.6	4.4	−5.0
REF. NO.	Q79			Q80			Q81			Q82			Q83			Q84		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
	5.1	0.4	4.4	−5.6	4.4	−0.3	5.1	0.1	4.4	−5.6	4.4	5.2	5.1	0.1	4.4	0.1	−12.0	0.6
REF. NO.	Q85			Q86			Q87			Q88			Q90					
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
	5.2	5.1	4.5	11.9	5.5	11.3	4.0	11.3	4.6	−0.6	8.2	0	0.2	−12.0	−0.4			

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGES ARE FOLLOWING CONDITIONS.

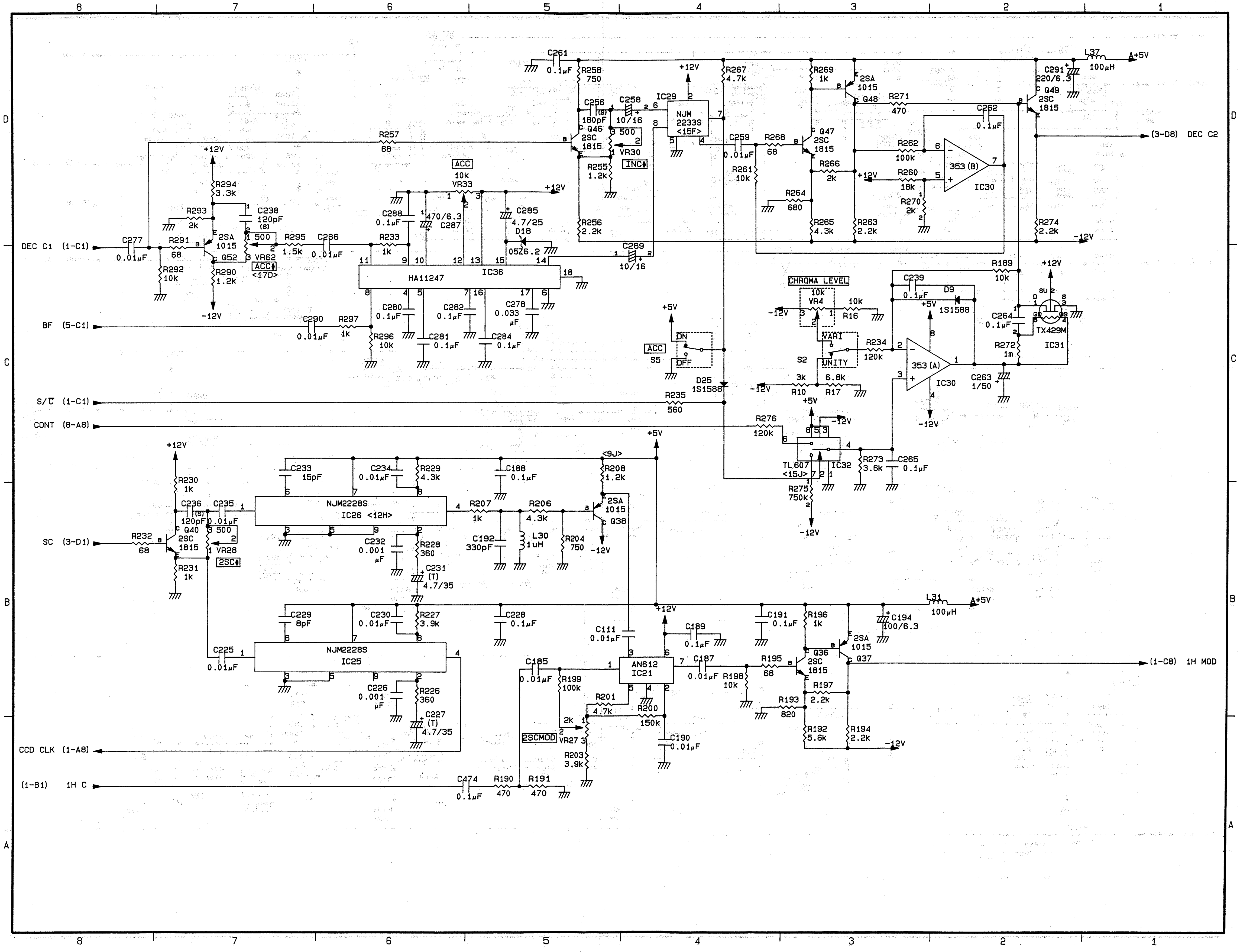
- POWER SW…ON.
- VIDEO INPUT CONNECTOR…PAL COLOUR BAR SIGNAL INPUT.

PROCESS SCHEMATIC DIAGRAM (1/9)



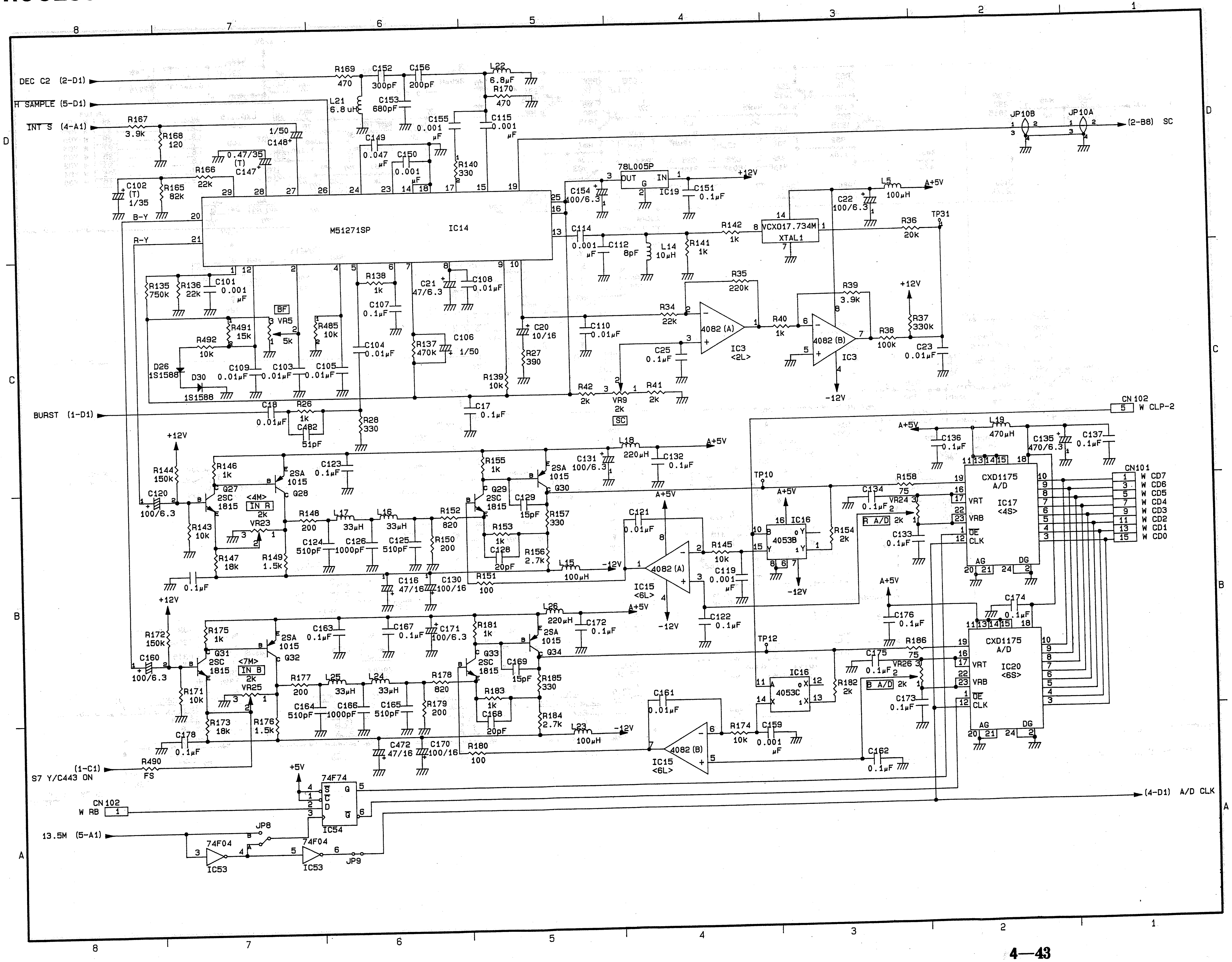
S-Y (8-B1)
VIDEO (8-B1)
1H MOD (2-B1)
CCD CLK (2-A8)
(4-D8) Y
(3-C8) BURST
(9-D8) S-C IN
(2-D8) DEC C1
(2-C8) (9-A8) S/C
(3-A8) S7 Y/C443 ON
(5-C1) VD
(2-A8) 1H C
SY IN
TP2
TP1
TP8
TP16
TP32
TP44
TP43
TP45
COM Y
Y ADP
S-C
COM C
C ADP
ADP
COMPO
S7
Y/C443
CCD
DCE 20-35
DL1 <4A>
JP1
JP16A
JP16B
JP12
NJM 2235 <2C>
NJM 2233S
CX894 <17C>
74LS123
74HC00
74HC02
74HC221
IC41
IC48
IC49
IC58
1414 (B)
IC18 <7F>
CXL5003 IC28 <14D>
CXL5003 IC24 <12D>
COM BAL
COM
2H
1H
VBL
<14B>
<13B>
<16D>
<1A>
<2A>
<8A>
<16B>
<16C>
+12V
-12V
+5V
A+5V
1S1588 1S1588

PROCESS SCHEMATIC DIAGRAM (2/9)


8
7
6
5
4
3
2
1
D
C
B
A
DEC C1 (1-C1)
BF (5-C1)
S/C̄ (1-C1)
CONT (8-A8)
SC (3-D1)
CCD CLK (1-A8)
(1-B1) 1H C
(3-D8) DEC C2
(1-C8) 1H MOD
+12V
-12V
+5V
C277 0.01μF
R291 68
R292 10k
R293 2K
R294 3.3K
2SA 1015 Q52
R290 1.2K
C238 120pF (S)
500 VR62 ACC <17D>
R295 1.5K
C286 0.01μF
R233 1K
C288 0.1μF
470/6.3 C287
ACC 10K VR33
C285 4.7/25
D18 05Z6.2
HA11247 IC36
C280 0.1μF
C281 0.1μF
C282 0.1μF
C284 0.1μF
C278 0.033μF
C290 0.01μF
R297 1K
R296 10K
R257 68
C261 0.1μF
R258 750
C256 180pF (S)
Q46 2SC 1815
C258 10/16
500 VR30 INC
R255 1.2K
R256 2.2K
C289 10/16
IC29 NJM 2233S <15F>
R267 4.7K
C259 0.01μF
R261 10K
R268 68
Q47 2SC 1815
R264 680
R265 4.3K
R266 2K
R263 2.2K
R269 1K
2SA 1015 Q48
R271 470
C262 0.1μF
R262 100K
R260 18K
R270 2K
353 (B) IC30
C291 220/6.3
Q49 2SC 1815
L37 100μH
R274 2.2K
ACC S5 ON OFF
D25 1S1588
R235 560
CHROMA LEVEL 10K VR4
R16 10K
S2 VARI UNITY
R10 3K
R17 6.8K
R234 120K
C239 0.1μF
D9 1S1588
R189 10K
353 (A) IC30
C264 0.1μF
R272 1m
TX429M IC31
C263 1/50
R276 120K
TL607 <15J> IC32
R275 750K
R273 3.6K
C265 0.1μF
R230 1K
C236 120pF (S)
C235 0.01μF
Q40 2SC 1815
500 VR28 2SC
R232 68
R231 1K
C233 15pF
C234 0.01μF
R229 4.3K
NJM2228S IC26 <12H>
C232 0.001μF
R228 360
C231 (T) 4.7/35
C188 0.1μF
<9J>
R208 1.2K
R207 1K
R206 4.3K
2SA 1015 Q38
C192 330pF
L30 1uH
R204 750
C229 8pF
C230 0.01μF
R227 3.9K
NJM2228S IC25
C225 0.01μF
C226 0.001μF
R226 360
C227 (T) 4.7/35
C228 0.1μF
C111 0.01μF
C189 0.1μF
AN612 IC21
C185 0.01μF
R199 100K
R201 4.7K
R200 150K
2K 2SCMOD VR27
R203 3.9K
C190 0.01μF
C474 0.1μF
R190 470
R191 470
C187 0.01μF
R198 10K
C191 0.1μF
R196 1K
R195 68
Q36 2SC 1815
2SA 1015 Q37
R197 2.2K
R193 820
R192 5.6K
R194 2.2K
L31 100μH
C194 100/6.3

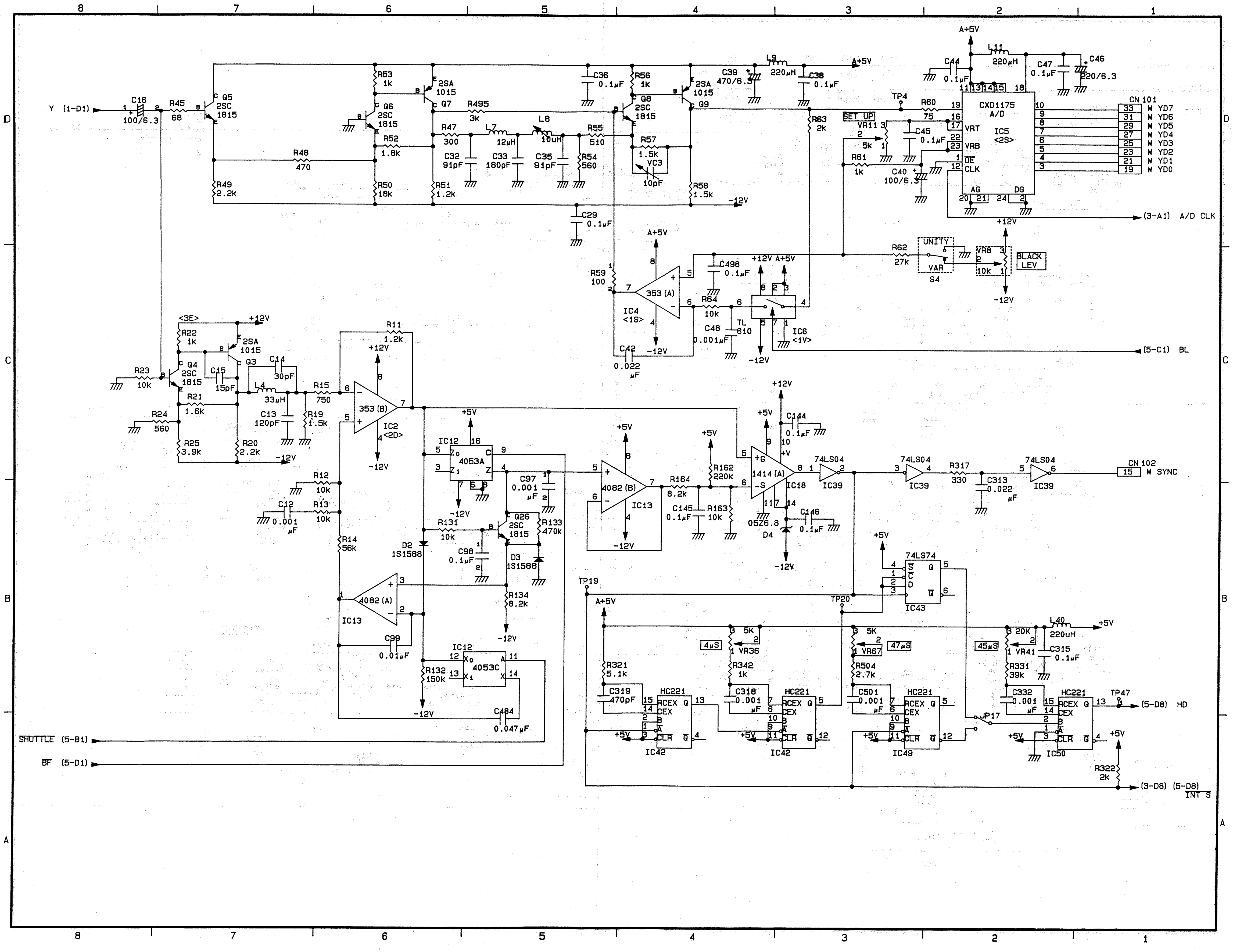
[redacted]

PROCESS SCHEMATIC DIAGRAM (3/9)

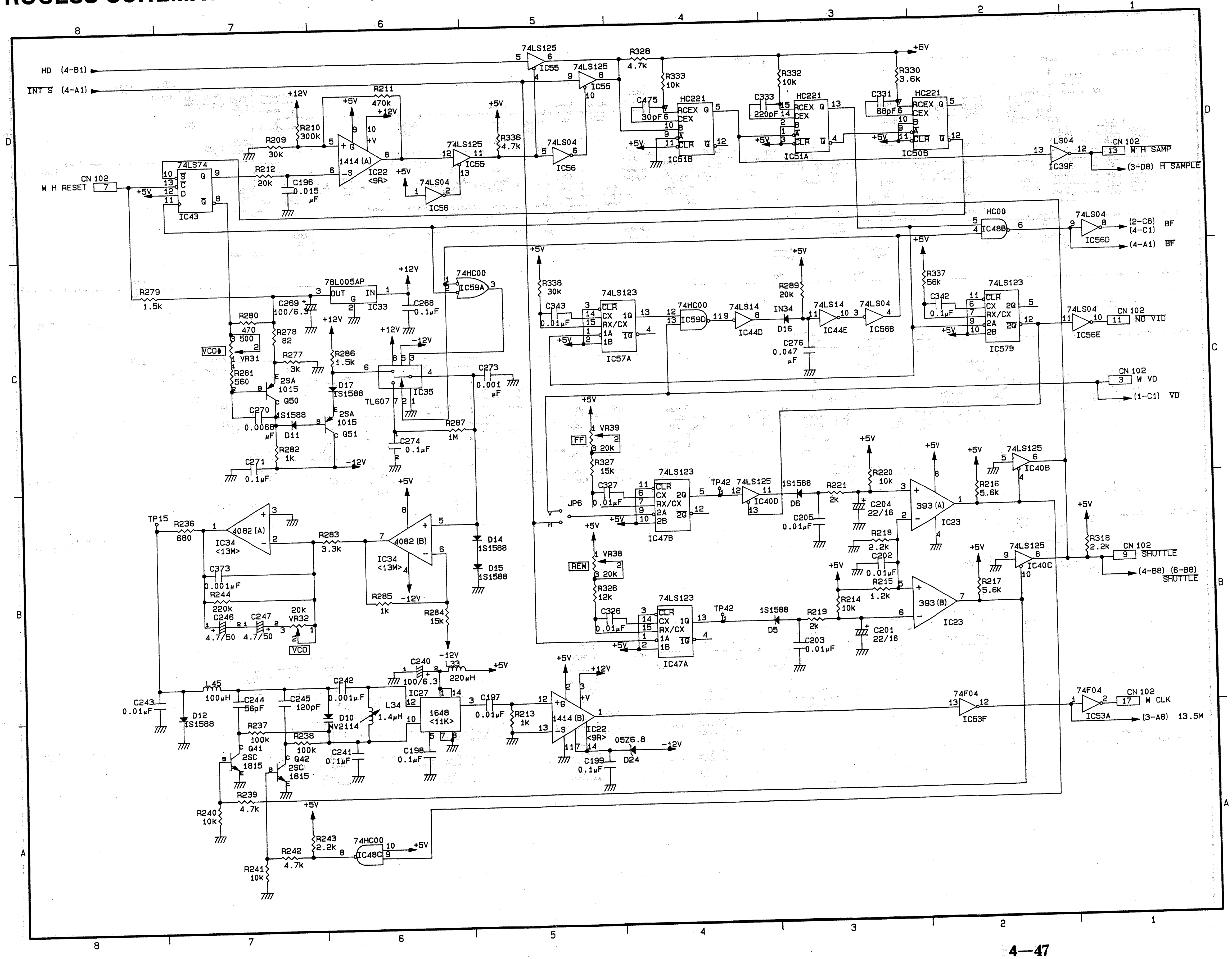


8
7
6
5
4
3
2
1
D
C
B
A
DEC C2 (2-D1)
H SAMPLE (5-D1)
INT S (4-A1)
BURST (1-D1)
(1-C1) S7 Y/C443 ON
CN102 W RB 1
13.5M (5-A1)
(2-B8) SC
CN102 5 W CLP-2
(4-D1) A/D CLK
M51271SP IC14
B-Y
R-Y
R169 470
C152 300pF
C156 200pF
L22 6.8μF
R170 470
L21 6.8μH
C153 680pF
C155 0.001μF
C115 0.001μF
C149 0.047μF
C150 0.001μF
R140 330
R167 3.9k
R168 120
C148 1/50
C147 0.47/35 (T)
R166 22k
C102 (T) 1/35
R165 82k
R135 750k
R136 22k
C101 0.001μF
BF
VR5 5k
R491 15k
R492 10k
R485 10k
D26 1S1588
D30 1S1588
C109 0.01μF
C103 0.01μF
C105 0.01μF
R138 1k
C107 0.1μF
C104 0.01μF
C21 47/6.3
C108 0.01μF
R137 470k
C106 1/50
C20 10/16
R27 390
R139 10k
C18 0.01μF
R26 1k
C492 51pF
R28 330
C17 0.1μF
78L005P IC19
OUT G IN
C154 100/6.3
C151 0.1μF
+12V
C114 0.001μF
C112 8pF
L14 10μH
R141 1k
R142 1k
VCXO17.734M XTAL1
C22 100/6.3
L5 100μH
A+5V
R36 20k
TP31
R35 220k
R34 22k
C110 0.01μF
C25 0.1μF
4082 (A) IC3 <2L>
R40 1k
R39 3.9k
4082 (B) IC3
R37 330k
R38 100k
C23 0.01μF
-12V
R42 2k
VR9 2k
SC
R41 2k
+12V
R144 150k
C120 100/6.3
R146 1k
Q27 2SC 1815
Q28 2SA 1015
<4M> IN R
VR23 2k
R143 10k
C123 0.1μF
R148 200
L17 33μH
L16 33μH
C124 510pF
C126 1000pF
C125 510pF
R147 18k
R149 1.5k
R152 820
R150 200
C116 47/16
C130 100/16
R151 100
R155 1k
Q29 2SC 1815
C129 15pF
Q30 2SA 1015
R157 330
R153 1k
C128 20pF
R156 2.7k
L18 220μH
C131 100/6.3
C132 0.1μF
L15 100μH
C121 0.01μF
4082 (A) IC15 <6L>
R145 10k
C119 0.001μF
C122 0.1μF
0.1μF
R172 150k
C160 100/6.3
R175 1k
Q31 2SC 1815
Q32 2SA 1015
<7M> IN B
VR25 2k
R171 10k
C163 0.1μF
C167 0.1μF
C171 100/6.3
R177 200
L25 33μH
L24 33μH
C164 510pF
C166 1000pF
C165 510pF
R173 18k
R176 1.5k
R178 820
R179 200
C178 0.1μF
C472 47/16
C170 100/16
R180 100
R181 1k
Q33 2SC 1815
C169 15pF
Q34 2SA 1015
R185 330
R183 1k
C168 20pF
R184 2.7k
L26 220μH
C172 0.1μF
L23 100μH
C161 0.01μF
4082 (B) IC15 <6L>
R174 10k
C159 0.001μF
C162 0.1μF
R490 FS
+5V
74F74 IC54
S D C Q Q̄
JP8
74F04 IC53
JP9
TP10
IC16 4053B
R154 2k
TP12
IC16 4053C
R182 2k
L19 470μH
C136 0.1μF
C135 470/6.3
C137 0.1μF
R158 75
C134 0.1μF
VR24 2k
R A/D
C133 0.1μF
CXD1175 A/D IC17 <4S>
VRT VRB OE CLK AG DG
C176 0.1μF
C174 0.1μF
R186 75
C175 0.1μF
VR26 2k
B A/D
C173 0.1μF
CXD1175 A/D IC20 <6S>
CN101
W CD7
W CD6
W CD5
W CD4
W CD3
W CD2
W CD1
W CD0
JP10B
JP10A

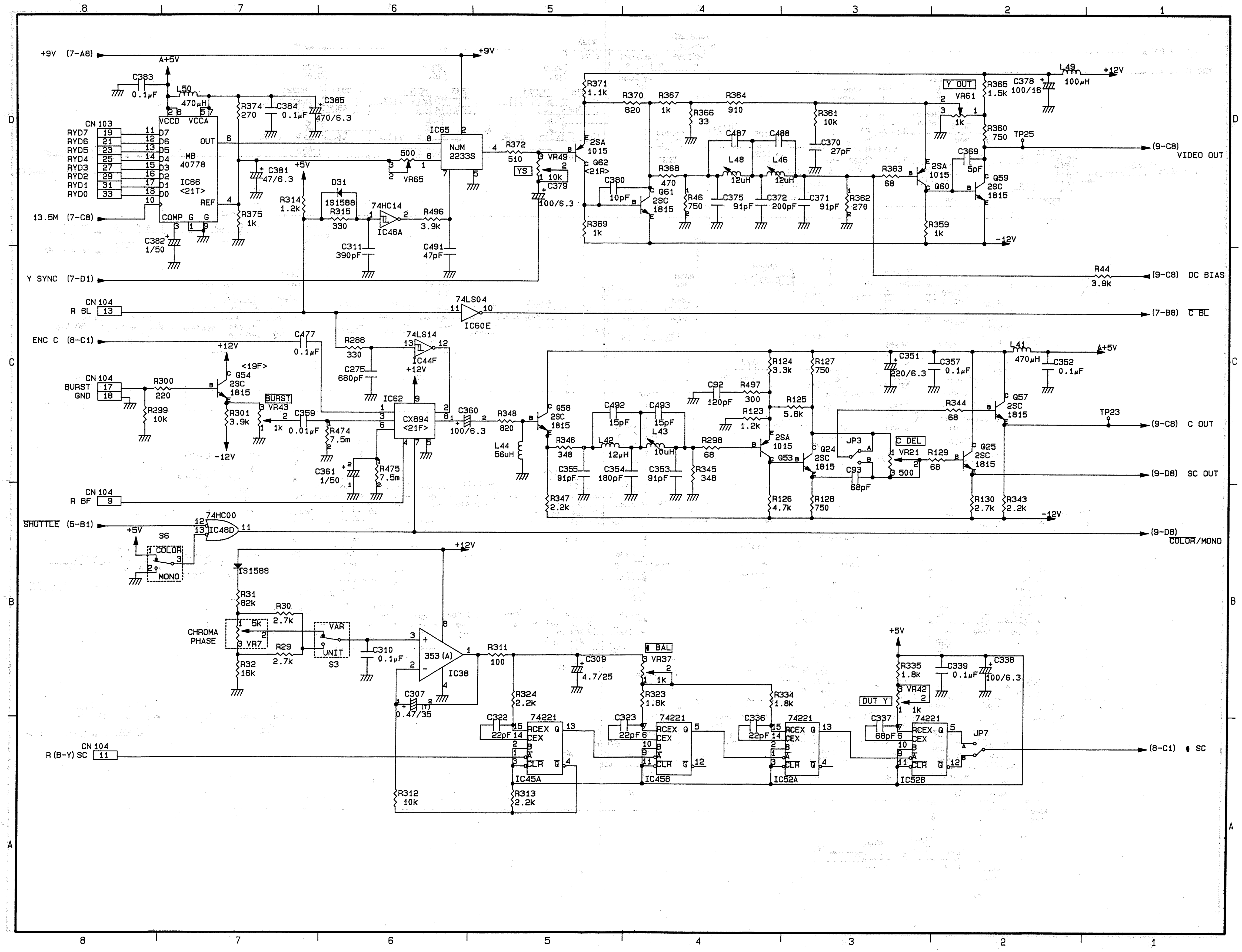
PROCESS SCHEMATIC DIAGRAM (4/9)


8
7
6
5
4
3
2
1
D
C
B
A
Y (1-D1)
C16 100/6.3
R45 68
Q5 2SC 1815
R48 470
R49 2.2k
R53 1k
Q6 2SC 1815
R52 1.8k
R50 18k
2SA 1015 Q7
R495 3k
R47 300
L7 12µH
L8 10µH
R55 510
C32 91pF
C33 180pF
C35 91pF
R54 560
R51 1.2k
C36 0.1µF
R56 1k
Q8 2SC 1815
R57 1.5k
VC3 10pF
2SA 1015 Q9
R58 1.5k
-12V
C29 0.1µF
C39 470/6.3
L9 220µH
C38 0.1µF
A+5V
R63 2k
TP4
R60 75
SET UP
VR11 5k
C45 0.1µF
R61 1k
C40 100/6.3
A+5V
C44 0.1µF
L11 220µH
C47 0.1µF
C46 220/6.3
CXD1175 A/D
IC5 <2S>
VRT
VRB
OE
CLK
AG
DG
CN 101
W YD7
W YD6
W YD5
W YD4
W YD3
W YD2
W YD1
W YD0
(3-A1) A/D CLK
R62 27k
UNITY
VAR
S4
VR8 10k
BLACK LEV
+12V
-12V
R59 100
353 (A)
IC4 <1S>
C498 0.1µF
+12V A+5V
R64 10k
C48 0.001µF
TL 610
IC6 <1V>
C42 0.022 µF
(5-C1) BL
<3E>
R22 1k
Q3 2SA 1015
Q4 2SC 1815
C15 15pF
C14 30pF
L4 33µH
R23 10k
R21 1.6k
R24 560
R25 3.9k
R20 2.2k
C13 120pF
R15 750
R19 1.5k
R11 1.2k
353 (B)
IC2 <2D>
R12 10k
C12 0.001 µF
R13 10k
R14 56k
IC12
4053A
C97 0.001 µF
D2 1S1588
R131 10k
Q26 2SC 1815
R133 470k
C98 0.1µF
D3 1S1588
R134 8.2k
4082 (A)
IC13
C99 0.01µF
4053C
R132 150k
C484 0.047µF
4082 (B)
R164 8.2k
R162 220k
C145 0.1µF
R163 10k
1414 (A)
IC18
C144 0.1µF
05Z6.8 D4
C146 0.1µF
74LS04
IC39
R317 330
C313 0.022 µF
CN 102
W SYNC
74LS74
IC43
TP19
TP20
R321 5.1k
C319 470pF
HC221
IC42
VR36 5K
4µS
R342 1k
C318 0.001 µF
VR67 5K
47µS
R504 2.7k
C501 0.001 µF
IC49
VR41 20K
45µS
R331 39k
C332 0.001 µF
L40 220uH
C315 0.1µF
JP17
IC50
TP47
(5-D8) HD
R322 2k
(3-D8) (5-D8) INT S
SHUTTLE (5-B1)
BF (5-D1)

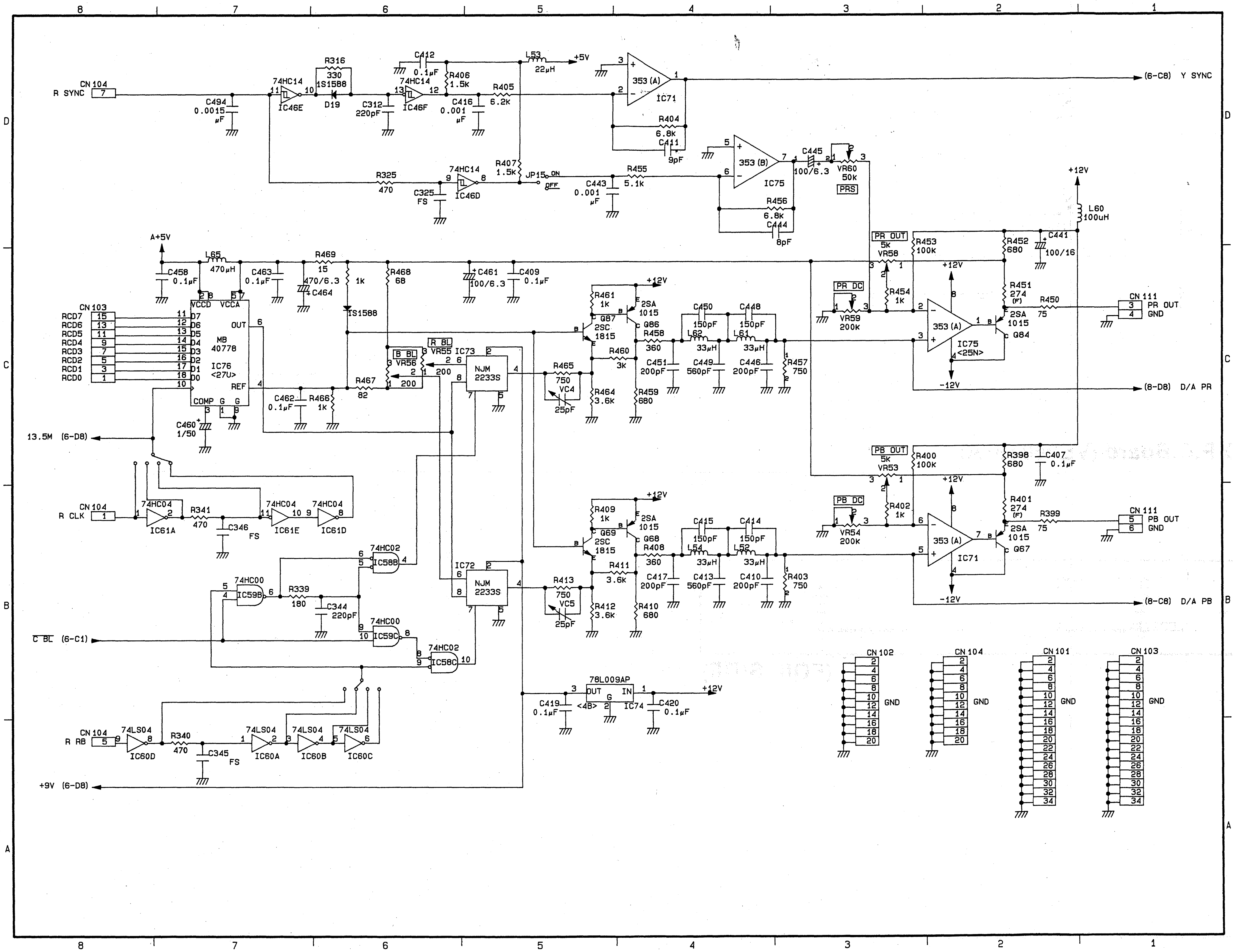
PROCESS SCHEMATIC DIAGRAM (5/9)


HD (4-B1)
INT S (4-A1)
CN 102
W H RESET
74LS74
IC43
74LS125
IC55
R328
4.7k
R333
10k
HC221
IC51B
R332
10k
C333
220pF
IC51A
R330
3.6k
C331
68pF
IC50B
+5V
+12V
R211
470k
R210
300k
R209
30k
R212
20k
C196
0.015 μF
1414 (A)
IC22
<9R>
R336
4.7k
74LS04
IC56
C475
30pF
LS04
IC39F
W H SAMP
(3-D8) H SAMPLE
HC00
IC48B
IC56D
(2-C8) (4-C1) BF
(4-A1) BF
R279
1.5k
78L005AP
IC33
C268
0.1μF
C269
100/6.3
74HC00
IC59A
R338
30k
C343
0.01μF
74LS123
IC57A
IC59D
74LS14
IC44D
R289
20k
IN34
D16
IC44E
IC56B
C276
0.047 μF
R337
56k
C342
0.1μF
IC57B
IC56E
NO VID
W VD
(1-C1) VD
R280
470
VCO
VR31
500
R281
560
R278
82
R277
3k
2SA
1015
Q50
R286
1.5k
D17
1S1588
TL607
IC35
C273
0.001 μF
C270
0.0068 μF
1S1588
D11
Q51
C274
0.1μF
R287
1M
R282
1k
C271
0.1μF
-12V
VR39
20k
FF
R327
15k
C327
0.01μF
IC47B
TP42
IC40D
D6
R221
2k
R220
10k
C204
22/16
C205
0.01μF
393 (A)
IC23
R216
5.6k
IC40B
R218
2.2k
C202
0.01μF
R215
1.2k
393 (B)
R217
5.6k
IC40C
R318
2.2k
SHUTTLE
(4-B8) (6-B8) SHUTTLE
JP6
VR38
REW
R326
12k
C326
IC47A
D5
R219
2k
R214
10k
C203
0.01μF
C201
22/16
TP15
R236
680
4082 (A)
IC34
<13M>
R283
3.3k
4082 (B)
D14
1S1588
D15
1S1588
C373
0.001μF
R244
220k
C246
4.7/50
C247
4.7/50
VR32
20k
R285
1k
R284
15k
C240
100/6.3
L33
220μH
C242
0.001μF
L45
100μH
C243
0.01μF
D12
1S1588
C244
56pF
C245
120pF
D10
MV2114
L34
1.4μH
IC27
1648
<11K>
C197
0.01μF
R213
1k
1414 (B)
05Z6.8
D24
C199
0.1μF
C198
0.1μF
C241
0.1μF
R237
100k
R238
100k
Q41
2SC
1815
Q42
R239
4.7k
R240
10k
R243
2.2k
R242
4.7k
R241
10k
IC48C
74F04
IC53F
IC53A
W CLK
(3-A8) 13.5M
8
7
6
5
4
3
2
1
A
B
C
D

PROCESS SCHEMATIC DIAGRAM (6/9)

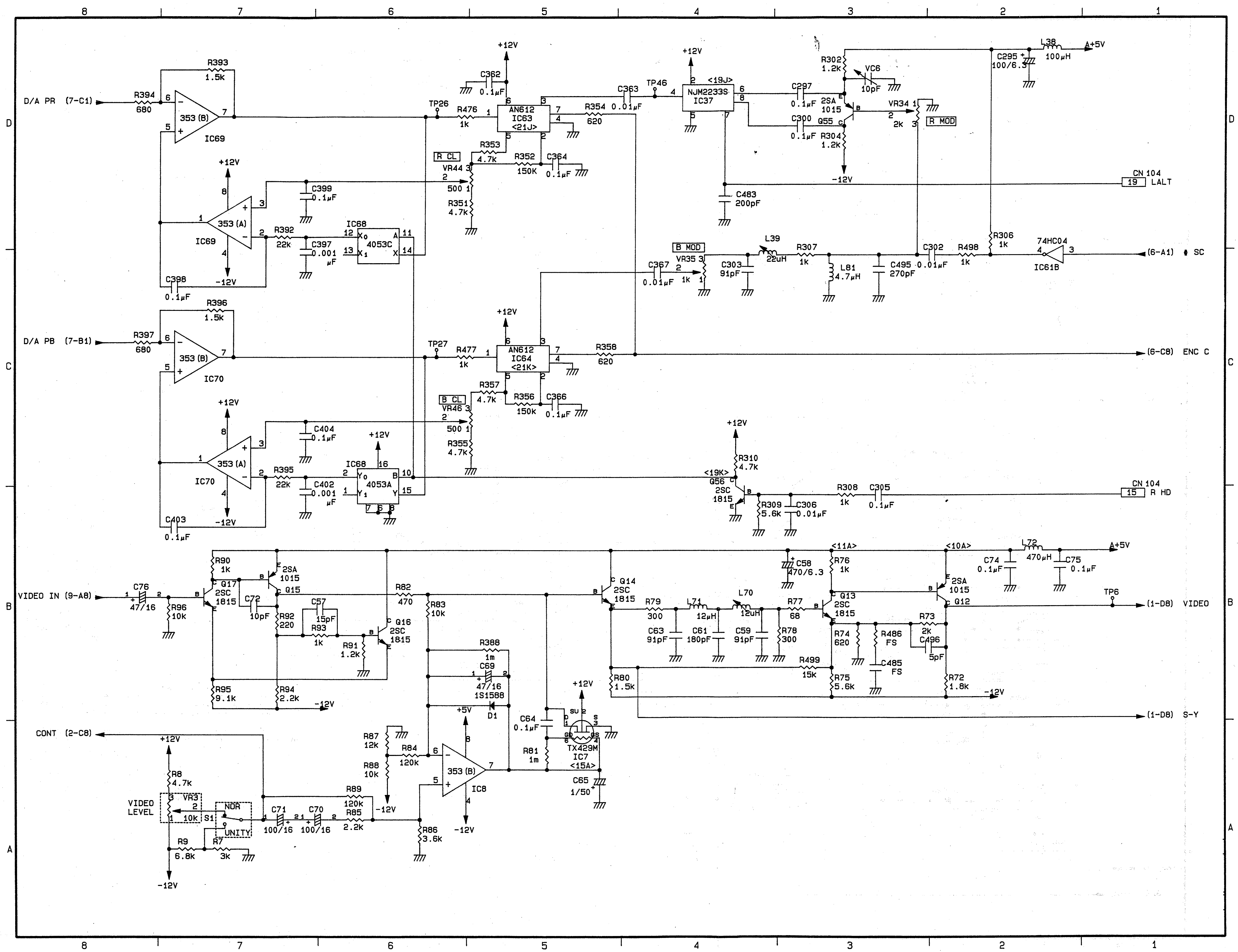

8
7
6
5
4
3
2
1
D
C
B
A
+9V (7-A8)
A+5V
+9V
C383
0.1µF
L50
470µH
R374
270
C384
0.1µF
C385
470/6.3
CN 103
RYD7 19
RYD6 21
RYD5 23
RYD4 25
RYD3 27
RYD2 29
RYD1 31
RYD0 33
MB 40778
IC66 <21T>
VCCD VCCA
OUT
REF
COMP G G
13.5M (7-C8)
C382
1/50
C381
47/6.3
+5V
R375
1k
R314
1.2k
D31
1S1588
R315
330
74HC14
IC46A
R496
3.9k
C311
390pF
C491
47pF
IC65
NJM 2233S
500
VR65
R372
510
YS
VR49
10k
C379
100/6.3
Y SYNC (7-D1)
R371
1.1k
R370
820
R367
1k
R364
910
R366
33
2SA 1015
Q62 <21R>
C380
10pF
Q61
2SC 1815
R368
470
R46
750
C487
C488
L48
12uH
L46
12uH
C375
91pF
C372
200pF
C371
91pF
R361
10k
C370
27pF
R362
270
R369
1k
Y OUT
VR61
1k
R365
1.5k
C378
100/16
L49
100µH
+12V
R360
750
TP25
R363
68
2SA 1015
Q60
C369
5pF
Q59
2SC 1815
R359
1k
-12V
(9-C8) VIDEO OUT
R44
3.9k
(9-C8) DC BIAS
CN 104
R BL 13
74LS04
IC60E
(7-B8) C BL
ENC C (8-C1)
C477
0.1µF
R288
330
C275
680pF
74LS14
IC44F
+12V
<19F>
Q54
2SC 1815
CN 104
BURST 17
GND 18
R300
220
R299
10k
R301
3.9k
BURST
VR43
1k
C359
0.01µF
R474
7.5m
C361
1/50
R475
7.5m
-12V
IC62
CX894 <21F>
C360
100/6.3
R348
820
L44
56uH
Q58
2SC 1815
R346
348
C355
91pF
R347
2.2k
C492
15pF
C493
15pF
L42
12µH
L43
10uH
C354
180pF
C353
91pF
R345
348
C92
120pF
R497
300
R123
1.2k
R125
5.6k
R298
68
2SA 1015
Q53
R124
3.3k
R127
750
Q24
2SC 1815
JP3
C93
68pF
R126
4.7k
R128
750
C351
220/6.3
C357
0.1µF
L41
470µH
C352
0.1µF
A+5V
R344
68
Q57
2SC 1815
TP23
(9-C8) C OUT
C DEL
VR21
500
R129
68
Q25
2SC 1815
(9-D8) SC OUT
R130
2.7k
R343
2.2k
-12V
CN 104
R BF 9
SHUTTLE (5-B1)
74HC00
IC48D
+5V
S6
COLOR
MONO
(9-D8) COLOR/MONO
+12V
1S1588
R31
82k
R30
2.7k
CHROMA PHASE
5k
VR7
R29
2.7k
R32
16k
VAR
UNIT
S3
C310
0.1µF
353 (A)
IC38
C307
0.47/35
R311
100
C309
4.7/25
BAL
VR37
1k
R324
2.2k
R323
1.8k
R334
1.8k
+5V
R335
1.8k
C339
0.1µF
C338
100/6.3
DUT Y
VR42
1k
C322
22pF
74221
IC45A
C323
22pF
74221
IC45B
C336
22pF
74221
IC52A
C337
68pF
74221
IC52B
RCEX Q
CEX
B
A
CLR Q̄
JP7
(8-C1) SC
CN 104
R (B-Y) SC 11
R312
10k
R313
2.2k

PROCESS SCHEMATIC DIAGRAM (7/9)



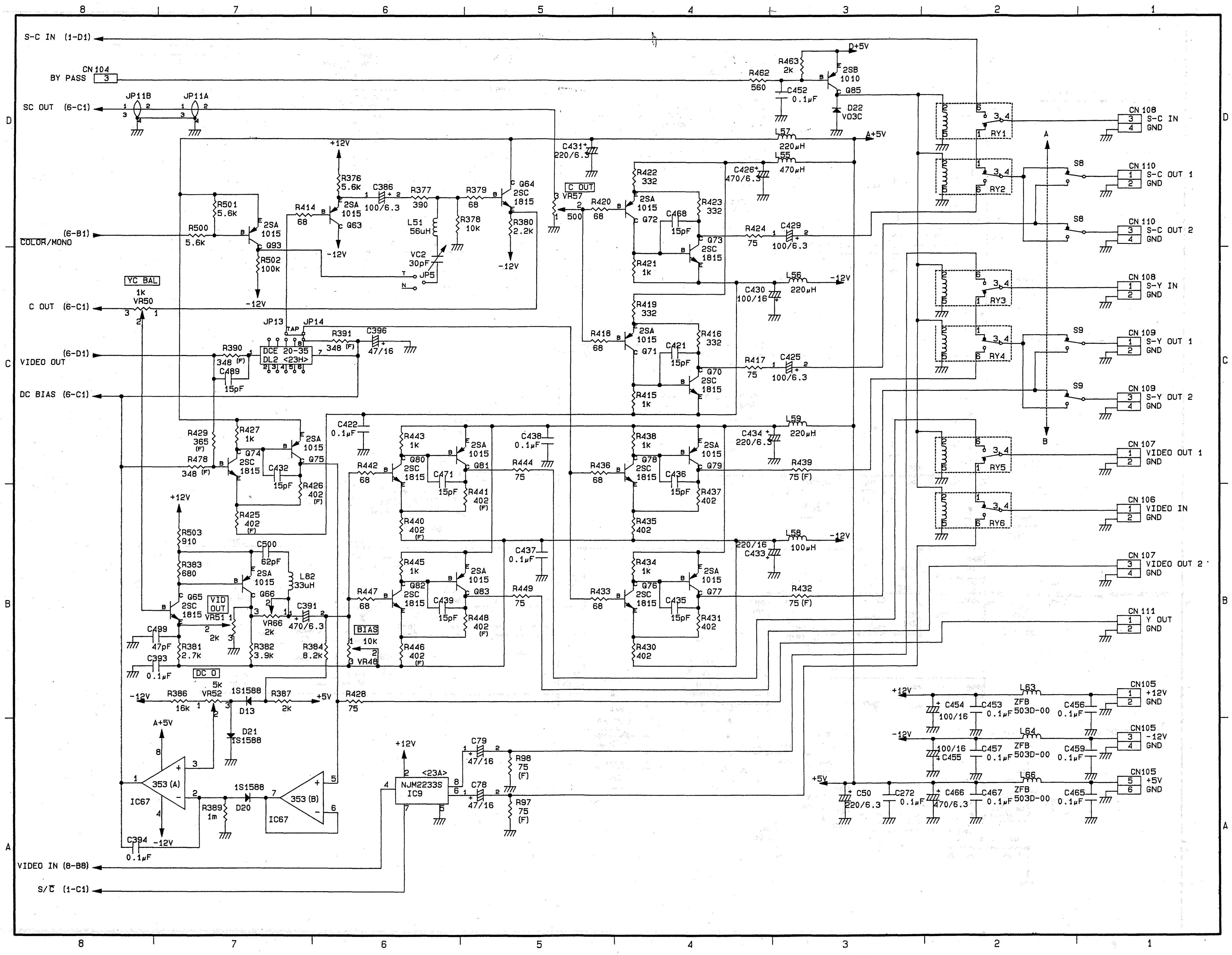
8
7
6
5
4
3
2
1
D
C
B
A
CN104
R SYNC
7
C494
0.0015 μF
74HC14
IC46E
R316
330
1S1588
D19
C312
220pF
C412
0.1μF
74HC14
IC46F
R406
1.5k
R405
6.2k
C416
0.001 μF
L53
22μH
+5V
353 (A)
IC71
R404
6.8k
C411
9pF
(6-C8) Y SYNC
R325
470
C325
FS
74HC14
IC46D
R407
1.5k
JP15
ON
OFF
C443
0.001 μF
R455
5.1k
353 (B)
IC75
R456
6.8k
C444
8pF
C445
100/6.3
VR60
50k
PRS
+12V
L60
100uH
A+5V
C458
0.1μF
L65
470μH
C463
0.1μF
R469
15
470/6.3
C464
1k
R468
68
C461
100/6.3
C409
0.1μF
CN103
RCD7
RCD6
RCD5
RCD4
RCD3
RCD2
RCD1
RCD0
15
13
11
9
7
5
3
1
VCCD
VCCA
D7
D6
D5
D4
D3
D2
D1
D0
OUT
MB
40778
IC76
<27U>
REF
COMP
G
C460
1/50
1S1588
R BL
B BL
VR56
200
VR55
200
IC73
NJM
2233S
R467
82
C462
0.1μF
R466
1k
R461
1k
Q87
2SC
1815
2SA
1015
Q86
R458
360
R460
3k
R464
3.6k
R459
680
R465
750
VC4
25pF
C450
150pF
C448
150pF
L62
33μH
L61
33μH
C451
200pF
C449
560pF
C446
200pF
R457
750
PR OUT
5k
VR58
R453
100k
R452
680
C441
100/16
PR DC
VR59
200k
R454
1k
353 (A)
IC75
<25N>
R451
274
(F)
R450
75
2SA
1015
Q84
-12V
CN111
3
4
PR OUT
GND
(8-D8) D/A PR
13.5M (6-D8)
PB OUT
5k
VR53
R400
100k
R398
680
C407
0.1μF
PB DC
VR54
200k
R402
1k
353 (A)
IC71
R401
274
(F)
R399
75
2SA
1015
Q67
CN111
5
6
PB OUT
GND
(8-C8) D/A PB
CN104
R CLK
1
74HC04
IC61A
R341
470
C346
FS
74HC04
IC61E
74HC04
IC61D
74HC02
IC58B
74HC00
IC59B
R339
180
C344
220pF
74HC00
IC59C
74HC02
IC58C
C BL (6-C1)
IC72
NJM
2233S
R409
1k
Q69
2SC
1815
2SA
1015
Q68
R408
360
R411
3.6k
R412
3.6k
R410
680
R413
750
VC5
25pF
C415
150pF
C414
150pF
L54
33μH
L52
33μH
C417
200pF
C413
560pF
C410
200pF
R403
750
78L009AP
OUT
IN
G
<4B>
IC74
C419
0.1μF
C420
0.1μF
+12V
CN104
R RB
5
74LS04
IC60D
R340
470
C345
FS
74LS04
IC60A
74LS04
IC60B
74LS04
IC60C
+9V (6-D8)
CN102
CN104
CN101
CN103
GND
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34

PROCESS SCHEMATIC DIAGRAM (8/9)

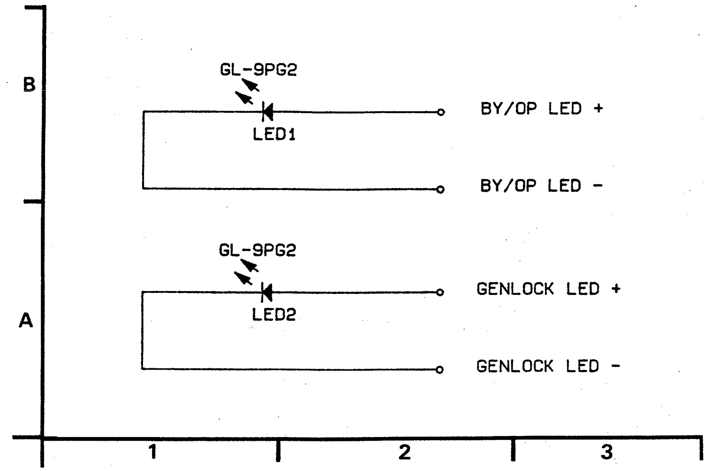


8
7
6
5
4
3
2
1
D
C
B
A
D/A PR (7-C1)
R394
680
R393
1.5k
353 (B)
IC69
353 (A)
R392
22k
C399
0.1μF
C397
0.001 μF
IC68
4053C
C398
0.1μF
+12V
-12V
D/A PB (7-B1)
R397
680
R396
1.5k
353 (B)
IC70
353 (A)
R395
22k
C404
0.1μF
C402
0.001 μF
4053A
C403
0.1μF
TP26
R476
1k
AN612
IC63
<21J>
C362
0.1μF
R354 0.01μF
620
R CL
VR44
500
R353
4.7k
R352
150K
C364
0.1μF
R351
4.7k
TP27
R477
1k
AN612
IC64
<21K>
R358
620
B CL
VR46
500
R357
4.7k
R356
150k
C366
0.1μF
R355
4.7k
C363
TP46
NJM2233S
IC37
<19J>
C297
0.1μF
C300
0.1μF
2SA 1015
Q55
R302
1.2k
R304
1.2k
VC6
10pF
VR34
2k
R MOD
C295
100/6.3
L38
100μH
+5V
C483
200pF
CN 104
19
LALT
B MOD
VR35
1k
C367
0.01μF
C303
91pF
L39
22uH
R307
1k
L81
4.7μH
C495
270pF
C302
0.01μF
R498
1k
R306
1k
74HC04
IC61B
(6-A1)
SC
(6-C8)
ENC C
R310
4.7k
<19K>
Q56
2SC 1815
R309
5.6k
C306
0.01μF
R308
1k
C305
0.1μF
CN 104
15
R HD
VIDEO IN (9-A8)
C76
47/16
R96
10k
R90
1k
Q17
2SC 1815
2SA 1015
Q15
C72
10pF
R92
220
C57
15pF
R93
1k
R91
1.2k
Q16
2SC 1815
R95
9.1k
R94
2.2k
R82
470
R83
10k
R388
1m
C69
47/16
1S1588
D1
Q14
2SC 1815
R79
300
L71
12μH
L70
12μH
R77
68
C63
91pF
C61
180pF
C59
91pF
R78
300
C58
470/6.3
<11A>
R76
1k
Q13
2SC 1815
R74
620
R486
FS
C485
FS
R73
2k
C496
5pF
R499
15k
R75
5.6k
R80
1.5k
R72
1.8k
<10A>
L72
470μH
C74
0.1μF
C75
0.1μF
2SA 1015
Q12
TP6
(1-D8)
VIDEO
S-Y
CONT (2-C8)
R8
4.7k
VIDEO LEVEL
VR3
10k
S1
NOR
UNITY
R9
6.8k
R7
3k
C71
100/16
C70
100/16
R89
120k
R85
2.2k
R87
12k
R88
10k
R84
120k
353 (B)
IC8
R86
3.6k
C64
0.1μF
R81
1m
TX429M
IC7
<15A>
C65
1/50

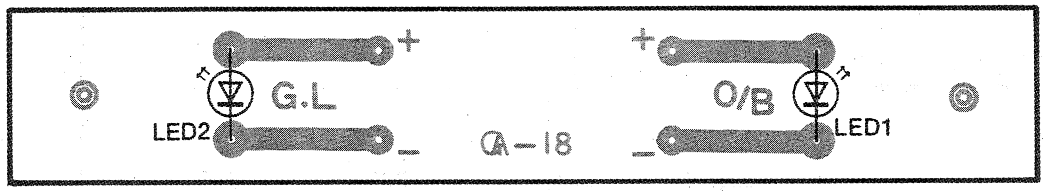
PROCESS SCHEMATIC DIAGRAM (9/9)


S-C IN (1-D1)
CN104
BY PASS
SC OUT (6-C1)
JP11B
JP11A
(6-B1)
COLOR/MONO
YC BAL
VR50
C OUT (6-C1)
(6-D1)
VIDEO OUT
DC BIAS (6-C1)
C OUT
VR57
VID OUT
VR51
VR66
BIAS
VR48
DC 0
VR52
IC67
353 (A)
353 (B)
NJM2233S
IC9
VIDEO IN (8-B8)
S/C̄ (1-C1)
DL2 <23H>
DCE 20-35
RY1
RY2
RY3
RY4
RY5
RY6
S8
S9
CN108 S-C IN GND
CN110 S-C OUT 1 GND
CN110 S-C OUT 2 GND
CN108 S-Y IN GND
CN109 S-Y OUT 1 GND
CN109 S-Y OUT 2 GND
CN107 VIDEO OUT 1 GND
CN106 VIDEO IN GND
CN107 VIDEO OUT 2 GND
CN111 Y OUT GND
CN105 +12V GND
CN105 -12V GND
CN105 +5V GND
D+5V
A+5V
+12V
-12V
+5V
2SB 1010 Q85
D22 VO3C
Q63
Q64
Q72
Q73
Q71
Q70
Q93
Q74
Q75
Q80
Q81
Q78
Q79
Q82
Q83
Q76
Q77
Q65
Q66
D13
D20
D21
1S1588
ZFB 503D-00
8
7
6
5
4
3
2
1
D
C
B
A

LED SCHEMATIC DIAGRAM

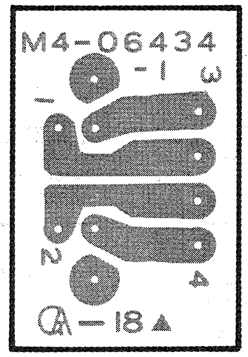

B
GL-9PG2
LED1
BY/OP LED +
BY/OP LED −
A
GL-9PG2
LED2
GENLOCK LED +
GENLOCK LED −
1
2
3

LED P.C.Board (VEP60197A)


+
G.L
LED2
−
A−18
+
O/B
LED1
−

(FOIL SIDE)

S-VIDEO CONNECTOR P.C.Board (VEP60198A)


M4-06434
-1
3
1
2
4
A−18 ▲

(FOIL SIDE)

INTER CONNECTION SCHEMATIC DIAGRAM

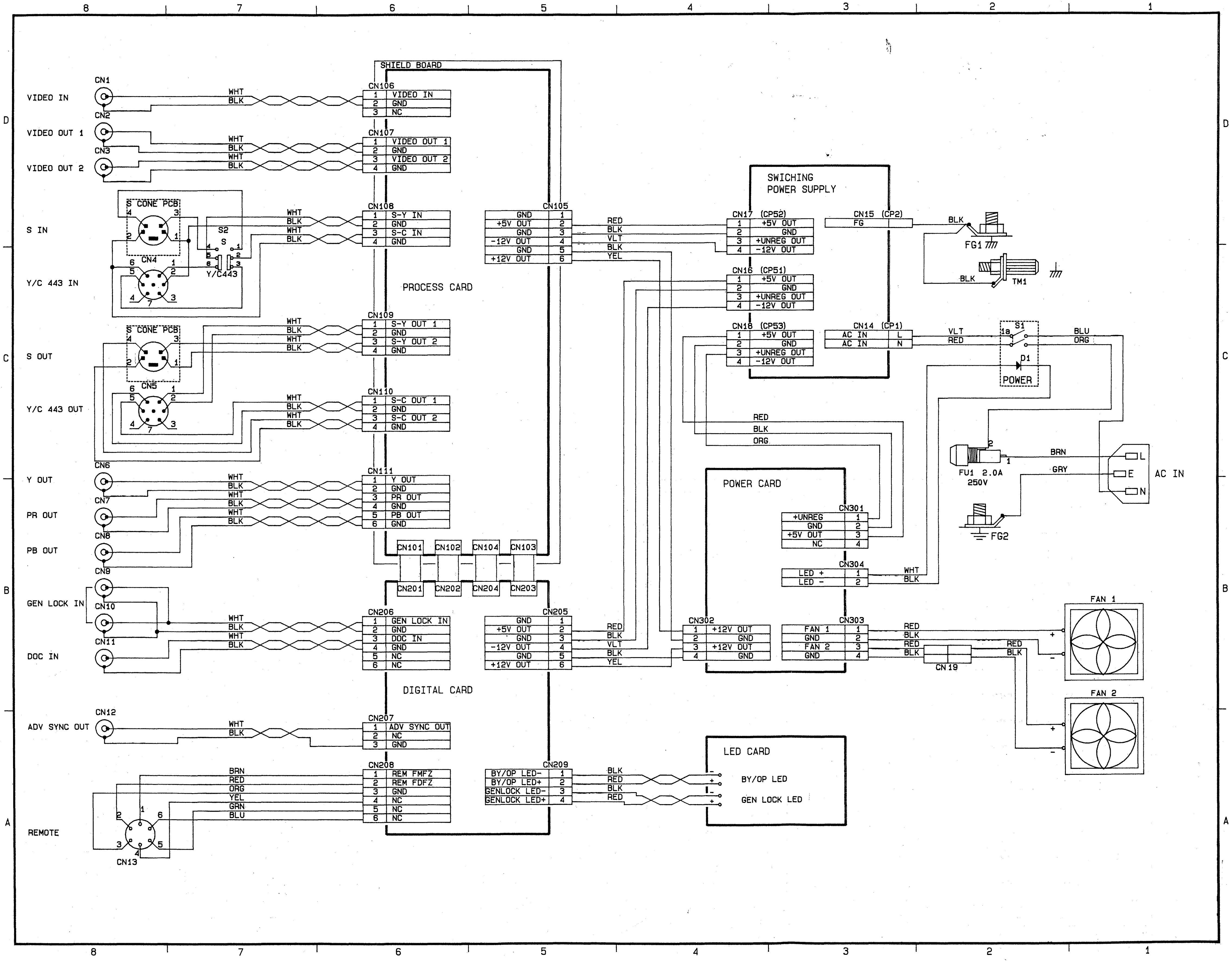

VIDEO IN
VIDEO OUT 1
VIDEO OUT 2
S IN
Y/C 443 IN
S OUT
Y/C 443 OUT
Y OUT
PR OUT
PB OUT
GEN LOCK IN
DOC IN
ADV SYNC OUT
REMOTE
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
CN13
S CONE PCB
S2
Y/C443
SHIELD BOARD
CN106
VIDEO IN
GND
NC
CN107
VIDEO OUT 1
VIDEO OUT 2
CN108
S-Y IN
S-C IN
CN109
S-Y OUT 1
S-Y OUT 2
CN110
S-C OUT 1
S-C OUT 2
CN111
Y OUT
PR OUT
PB OUT
PROCESS CARD
CN105
+5V OUT
-12V OUT
+12V OUT
CN101
CN102
CN104
CN103
CN201
CN202
CN204
CN203
CN206
GEN LOCK IN
DOC IN
CN205
DIGITAL CARD
CN207
ADV SYNC OUT
CN208
REM FMFZ
REM FDFZ
CN209
BY/OP LED-
BY/OP LED+
GENLOCK LED-
GENLOCK LED+
WHT
BLK
RED
VLT
YEL
BRN
ORG
GRN
BLU
GRY
SWICHING POWER SUPPLY
CN17 (CP52)
+5V OUT
+UNREG OUT
-12V OUT
CN16 (CP51)
CN18 (CP53)
CN15 (CP2)
FG
CN14 (CP1)
AC IN
L
N
FG1
TM1
S1
D1
POWER
FU1 2.0A
250V
AC IN
E
FG2
POWER CARD
CN301
+UNREG
+5V OUT
CN304
LED +
LED -
CN302
+12V OUT
CN303
FAN 1
FAN 2
CN19
LED CARD
BY/OP LED
GEN LOCK LED
8
7
6
5
4
3
2
1
D
C
B
A

Table 1. CN101↔CN201 (34 pin)

SIGNAL	PROCESS CN101	DIGITAL CN201
WYD7 (YD7)	33	2
WYD6 (YD6)	31	4
WYD5 (YD5)	29	6
WYD4 (YD4)	27	8
WYD3 (YD3)	25	10
WYD2 (YD2)	23	12
WYD1 (YD1)	21	14
WYD0 (YD0)	19	16
GND (GND)	17	18
WCD0 (CD0)	15	20
WCD1 (CD1)	13	22
WCD2 (CD2)	11	24
WCD3 (CD3)	9	26
WCD4 (CD4)	7	28
WCD5 (CD5)	5	30
WCD6 (CD6)	3	32
WCD7 (CD7)	1	34

Table 2. CN102↔CN202 (20 pin)

SIGNAL	PROCESS CN102	DIGITAL CN202
FRZ (OPEN)	19	2
W CLK (W 13.5M)	17	4
W SYNC ($\overline{\text{SYNC}}$)	15	6
$\overline{\text{W H SAMP}}$ ($\overline{\text{H SAMPLE}}$)	13	8
$\overline{\text{NO VID}}$ ($\overline{\text{NO VIDEO}}$)	11	10
$\overline{\text{SHUTTLE}}$ (NOR/$\overline{\text{SHUTTLE}}$)	9	12
W H RESET (H RESET)	7	14
W CLP-2 (CLP-2)	5	16
W VD ($\overline{\text{VD}}$)	3	18
WRB ($\overline{\text{W}}$−$\overline{\text{R}}$/B)	1	20

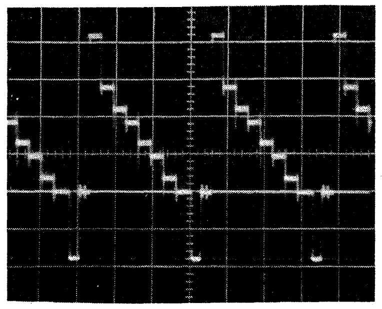
∗PROCESS CN102 19 pin is open. But FRZ signal is sent from DIGITAL P.C. Board.

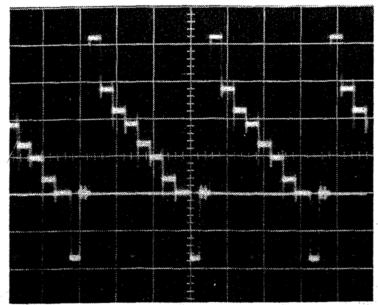
Table 3. CN103↔CN203 (34 pin)

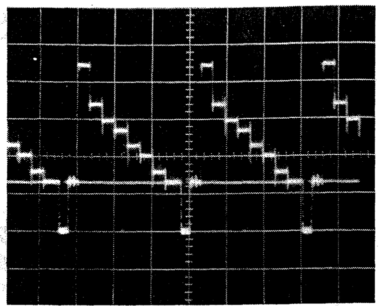
SIGNAL	PROCESS CN103	DIGITAL CN203
RYD0 (RYD0)	33	2
RYD1 (RYD1)	31	4
RYD2 (RYD2)	29	6
RYD3 (RYD3)	27	8
RYD4 (RYD4)	25	10
RYD5 (RYD5)	23	12
RYD6 (RYD6)	21	14
RYD7 (RYD7)	19	16
GND (GND)	17	18
RCD7 (RCD7)	15	20
RCD6 (RCD6)	13	22
RCD5 (RCD5)	11	24
RCD4 (RCD4)	9	26
RCD3 (RCD3)	7	28
RCD2 (RCD2)	5	30
RCD1 (RCD1)	3	32
RCD0 (RCD0)	1	34

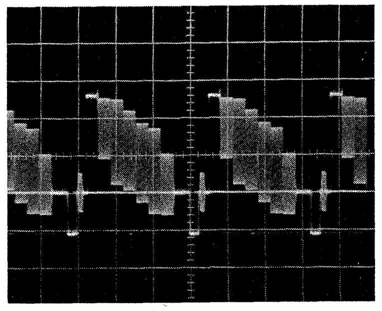
Table 4. CN104↔CN204 (20 pin)

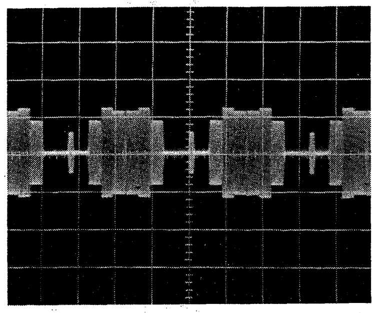
SIGNAL	PROCESS CN104	DIGITAL CN204
LALT (LALT)	19	2
BURST (BURST)	17	4
R HD (HD)	15	6
R BL (R BL)	13	8
R (B-Y) SC (B-YSC)	11	10
R BF (BF)	9	12
R SYNC (R SYNC)	7	14
RRB (R-$\overline{\text{R}}$/B)	5	16
BY PASS (BY PASS)	3	18
R CLK5 (R CLK)	1	20

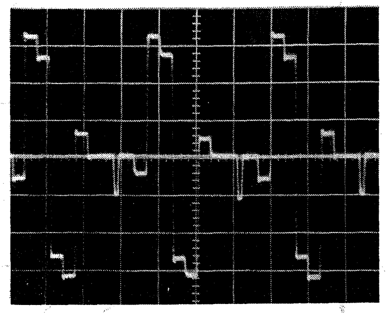

PROCESS
TP1 100mV/div. 20µsec./div.

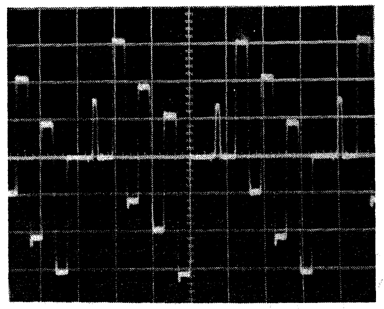

PROCESS
TP2 100mV/div. 20µsec./div.

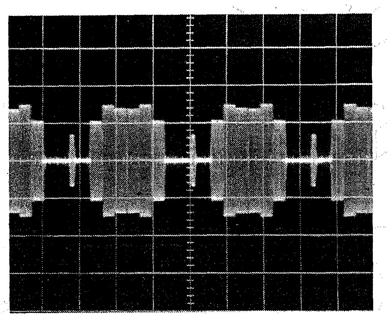

PROCESS
TP4 0.5V/div. 20µsec./div.

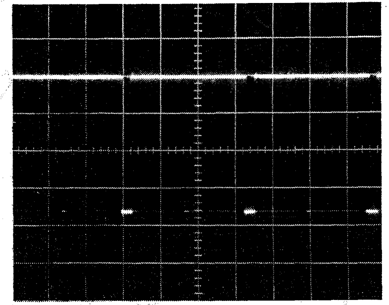

PROCESS
TP6 0.5V/div. 20µsec./div.

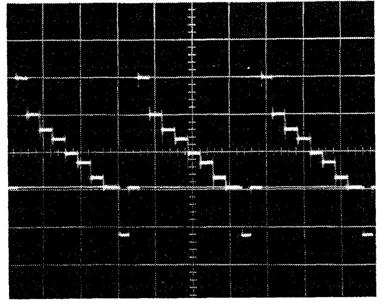

PROCESS
TP8 0.5V/div. 20µsec./div.

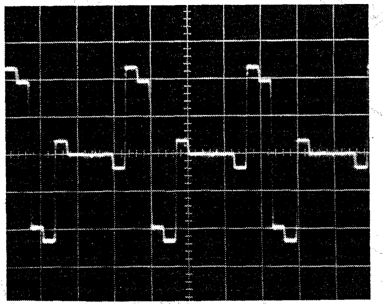

PROCESS
TP10 200mV/div. 20µsec./div.

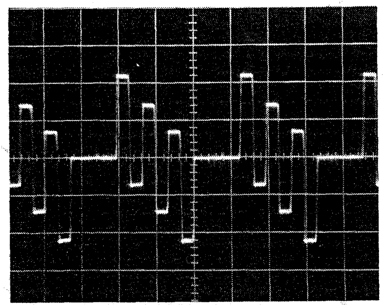

PROCESS
TP12 20mV/div. 20µsec./div.

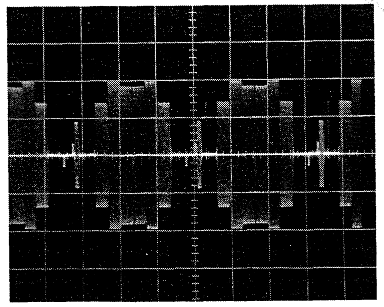

PROCESS
TP16 200mV/div. 20µsec./div.

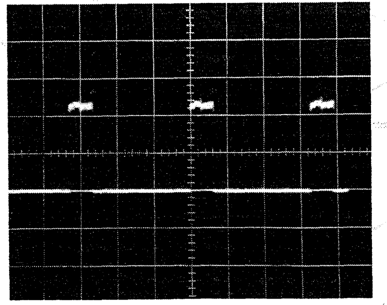

PROCESS
TP19 1V/div. 20µsec./div.

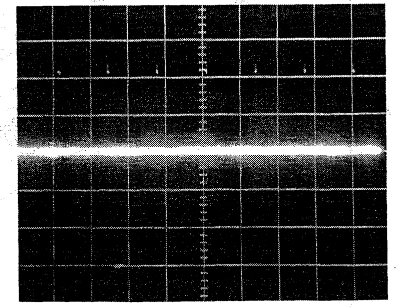

PROCESS
TP25 0.5V/div. 20µsec./div.

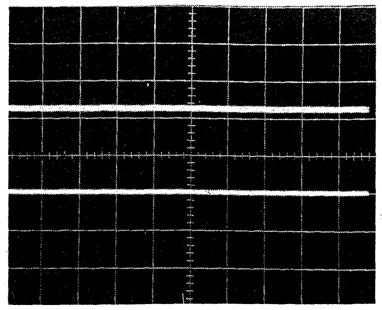

PROCESS
TP26 0.2V/div. 20µsec./div.

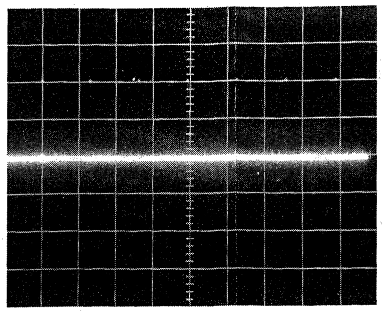

PROCESS
TP27 20mV/div. 20µsec./div.

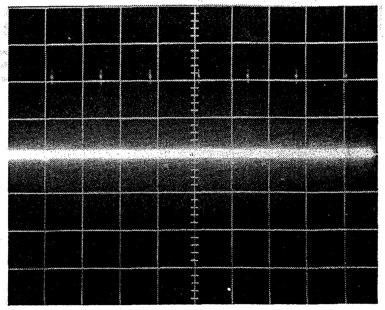

PROCESS
TP32 200mV/div. 20µsec./div.

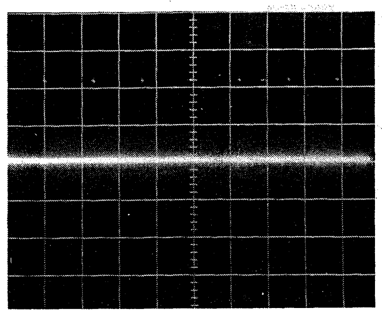

DIGITAL
TP6 2V/div. 20µsec./div.

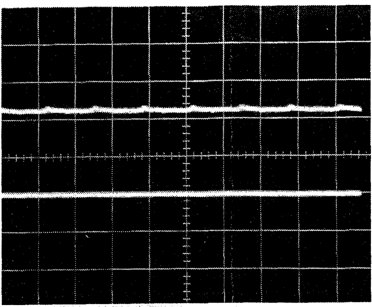

DIGITAL
TP7 2V/div. 50µsec./div.

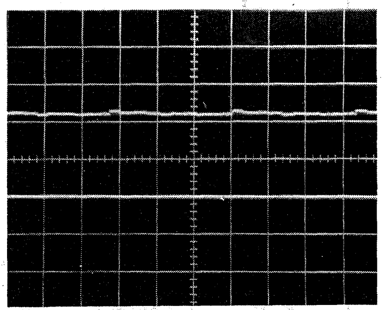

DIGITAL
TP9 2V/div. 50µsec./div.

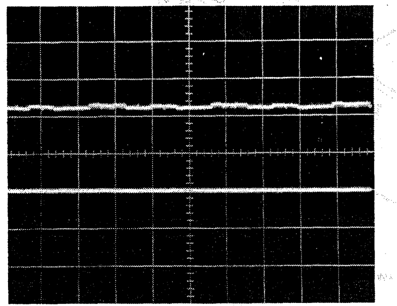

DIGITAL
TP10 2V/div. 50µsec./div.

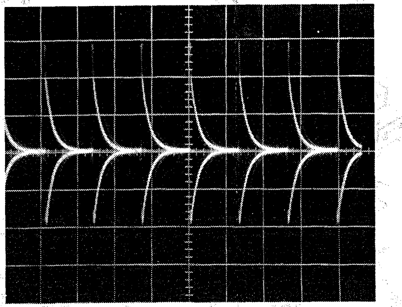

DIGITAL
TP12 2V/div. 50µsec./div.

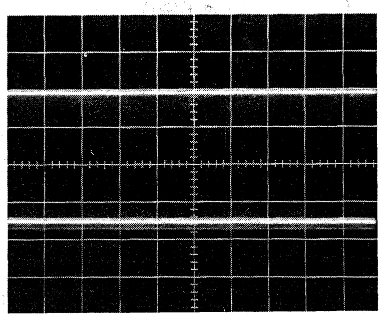

DIGITAL
TP13 2V/div. 50µsec./div.

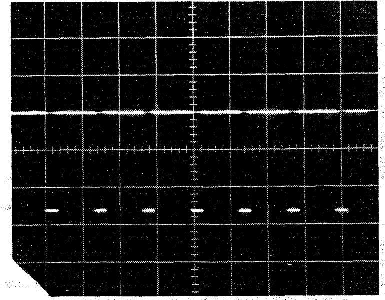

DIGITAL
TP14 2V/div. 50µsec./div.

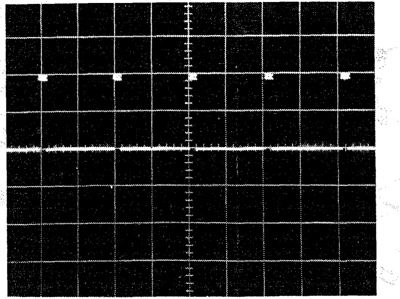

DIGITAL
TP15 2V/div. 20µsec./div.

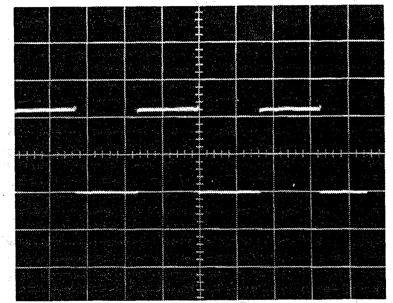

DIGITAL
TP16 2V/div. 20µsec./div.

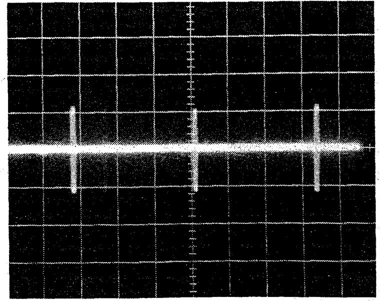

DIGITAL
TP17 1V/div. 50µsec./div.

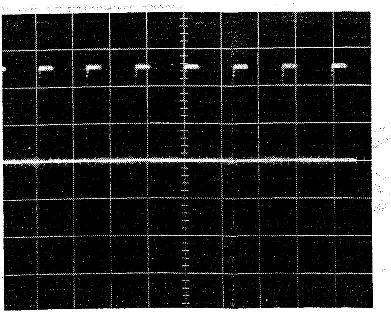

DIGITAL
TP20 1V/div. 50µsec./div.


DIGITAL
TP21 2V/div. 50µsec./div.


DIGITAL
TP22 2V/div. 10msec./div.

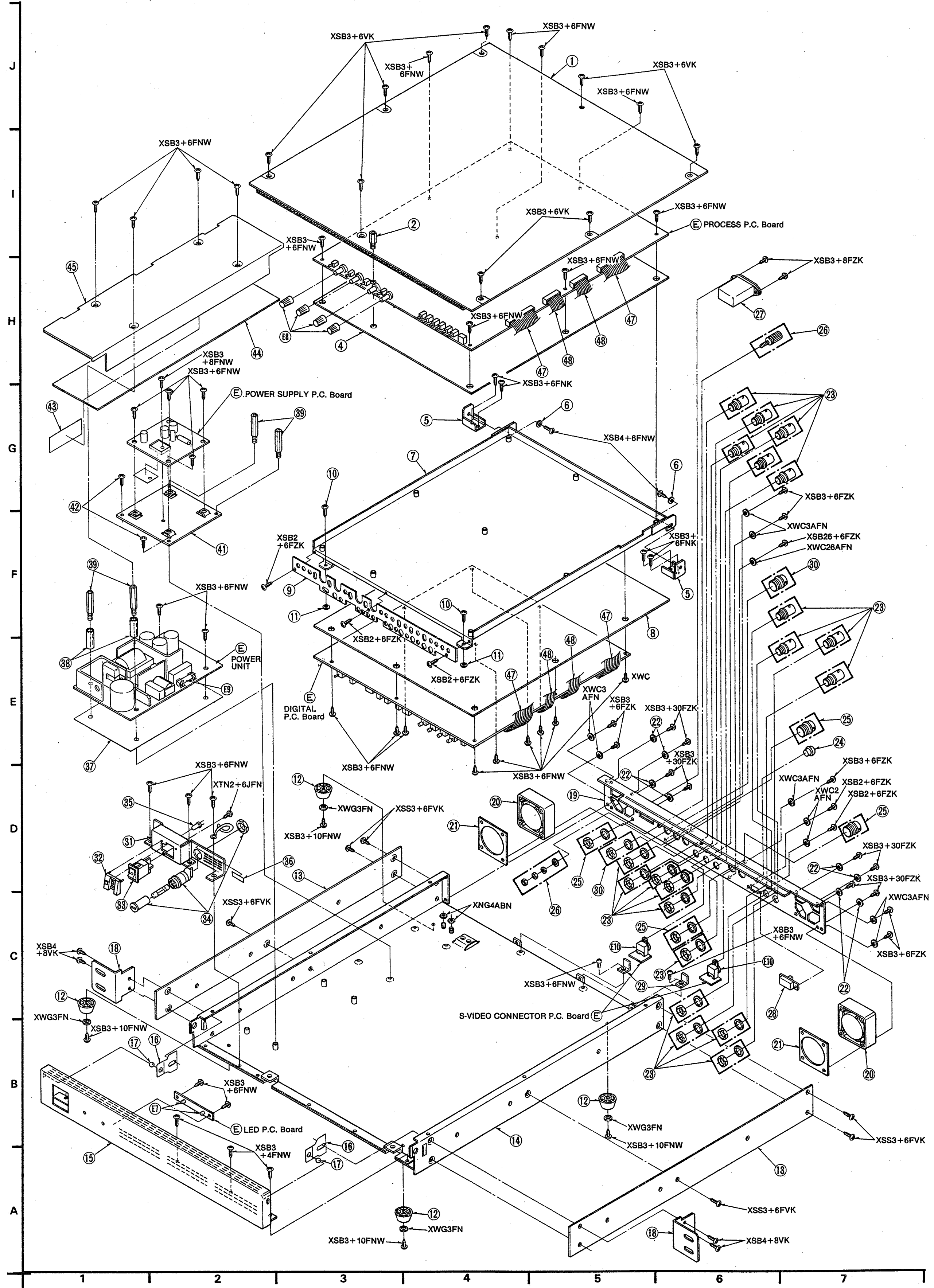

DIGITAL
TP23 2V/div. 20µsec./div.


DIGITAL
TP24 0.5V/div. 20µsec./div.


DIGITAL
TP25 2V/div. 50µsec./div.

EXPLODED VIEWS

❶ Casing Parts Section


J
I
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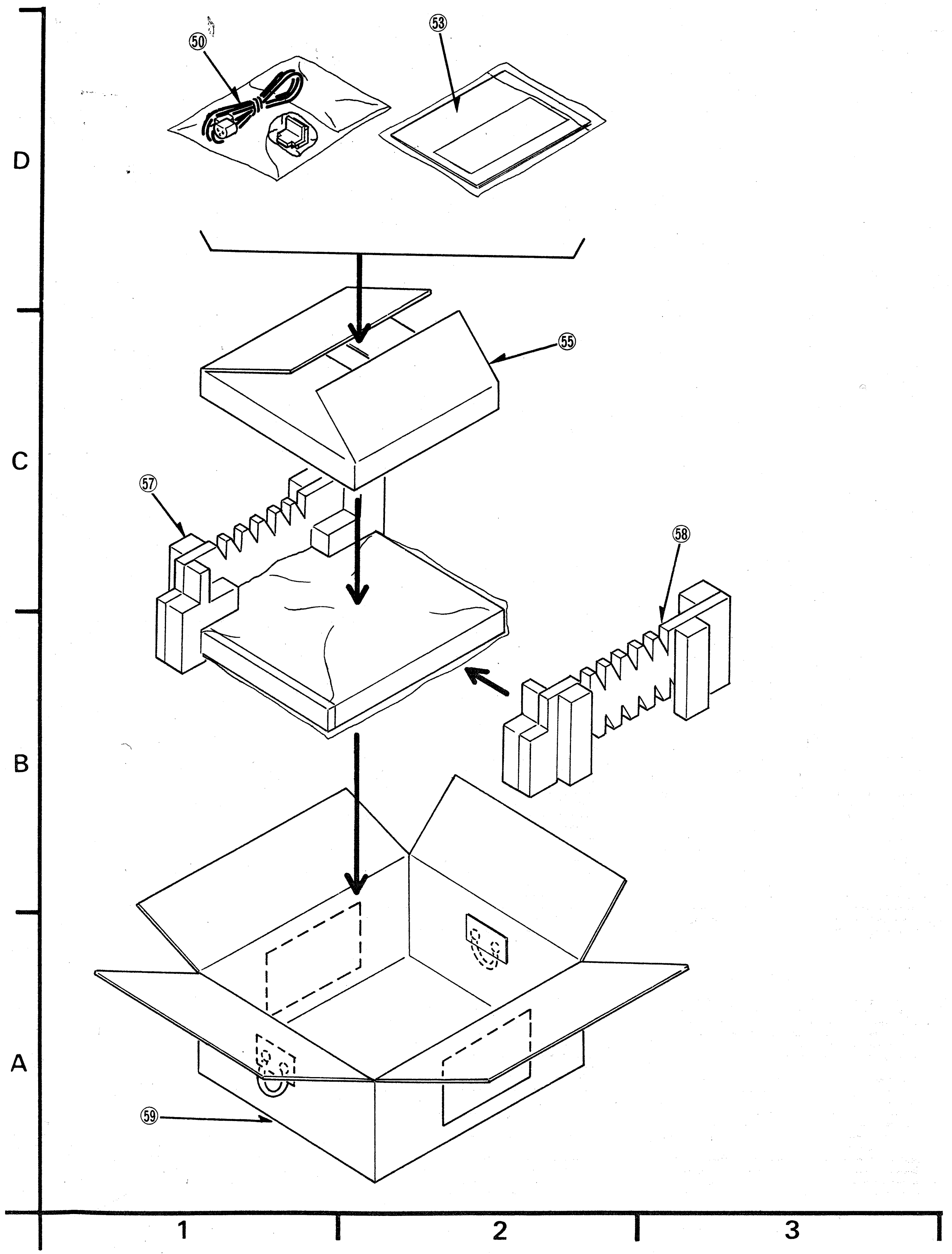
1
2
3
4
5
6
7
XSB3+6VK
XSB3+6FNW
①
XSB3+6VK
XSB3+6FNW
②
XSB3+6VK
XSB3+6FNW
Ⓔ PROCESS P.C. Board
XSB3+8FZK
XSB3+6FNW
㊺
XSB3+6FNW
④
㊻
㊼
㊽
㊼
㊽
㊹
XSB3+8FNW
XSB3+6FNW
Ⓔ POWER SUPPLY P.C. Board
㊴
XSB3+6FNK
⑤
⑥
㉗
㉖
㉓
㊸
⑦
XSB4+6FNW
⑥
㊷
㊶
⑩
XSB2+6FZK
⑨
XSB3+6FZK
XWC3AFN
XSB26+6FZK
XWC26AFN
XSB3+6FNK
⑤
㉚
㉓
㊴
XSB3+6FNW
⑪
⑩
⑧
㊼
㊳
XSB2+6FZK
⑪
㊽
㊽
Ⓔ POWER UNIT
XSB2+6FZK
㊼
XWC
Ⓔ DIGITAL P.C. Board
XWC3 AFN
XSB3+6FZK
XSB3+30FZK
㉒
XSB3+30FZK
㉕
㉔
㊲
XSB3+6FNW
XSB3+6FNW
XSB3+6FZK
XSB3+6FNW
XTN2+6JFN
⑫
㉒
⑲
XWC3AFN
XWC2 AFN
XSB2+6FZK
XSB2+6FZK
㉟
XWG3FN
XSS3+6FVK
⑳
㉑
㉕
㉛
XSB3+10FNW
XSB3+30FZK
㉜
㊱
⑬
㉖
㉕
㉚
㉒
XSB3+30FZK
XWC3AFN
㉝
㉞
XSS3+6FVK
XNG4ABN
㉓
㉕
XSB3+6FNW
XSB4+8VK
⑱
XSB3+6FNW
㉙
㉓
㉘
XSB3+6FZK
⑫
XWG3FN
XSB3+10FNW
S-VIDEO CONNECTOR P.C. Board Ⓔ
㉒
⑰
⑯
㉑
⑳
XSB3+6FNW
㉓
Ⓔ LED P.C. Board
XSB3+4FNW
⑮
⑱
⑰
⑭
⑫
XWG3FN
XSB3+10FNW
⑬
XSS3+6FVK
⑫
XWG3FN
XSB3+10FNW
XSS3+6FVK
⑱
XSB4+8VK

❷ Packing Parts Section


D
C
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(53)
(55)
(57)
(58)
(59)

REPLACEMENT PARTS LIST

Notes:

1. • Be sure to make your orders of replacement parts according to this list.
   • "<R>" in Remark column indicates recommended parts.
2. IMPORTANT SAFETY NOTICE
   Components identified by " ! " have special characteristics important for safety.
   When replacing any of these components, use only the original ones.
   Meaning of symbol ! on this parts list is exactly the same as symbol ⚠ on Schematic and Circuit Board Diagrams.
3. Unless otherwise specified;
   All resistors are in OHMS (Ω), K=1,000Ω, M=1,000KΩ.
4. ITEM NUMBERS WITH CAPITAL LETTER E
   Item numbers with capital letter E (Example: E1, E2,...) in Ref. No. column mean that the parts are listed with the E item numbers in the exploded views.
5. The main assembled parts are shown below C.B.A. marked with "■".
6. When ordering parts, use part No. only from Part No. column.
7. Printed circuit board assembly with mark (NLA) is no longer available after discontinuation of the product.

1. MECHANICAL REPLACEMENT PARTS LIST

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VGM0607	TOP PLATE	1	
2(1)		VMX1770	STAD SPACER (B)	1	
4(1)		VMZ1537	INSULATER (1)	1	
5(1)		VMP2582	HOLDER	2	
6(1)		VJF0819	ROLL BUSH	2	
7(1)		VMP2582	PCB SHELF	1	
8(1)		VMZ1538	INSULATER (2)	1	
9(1)		VGM2279	INDICATION PLATE	1	
10(1)		VHD0847	SCREW	2	
11(1)		VMX1562	WASHER	2	
12(1)		VGM0404	CASTER (RUBBER FOOT)	4	
13(1)		VGM0606	SIDE PANEL	2	
14(1)		VKU0330	CHASSIS	1	
15(1)		VGM0605	FRONTPANEL	1	
16(1)		VMC0574	SPRING	2	
17(1)		VDB1013	BEARING	2	
18(1)		VMP2625	RACK EAR	2	
19(1)		VGH2295	REAR PANEL	1	
20(1)		VRF0060	MOTOR FUN	2	<R>
21(1)		VHN0147	FUN PLATE	2	
22(1)		VMX1772	WASHER	8	
23(1)		VJS2560	CONNECTOR (BNC)	10	
24(1)		VJF0820	BUSH	1	
25(1)		VJP1132	CONNECTOR (YC443)	2	
26(1)		VJH0529	TERMINAL	1	
27(1)		VJP2580	AC INLET	1	<R>
28(1)		VSS0265	SWITCH	1	<R>
29(1)		VMP2585	STOPPER	2	
30(1)		VJS2878	CONNECTOR (REMOTE)	1	
31(1)		VMP2584	BRACKET	1	
32(1)		VGQ1733	SW GUARD	1	<R>
33(1)		VSW0039	SWITCH	1	<R>
34(1)		VJF0702	FUSE HOLDER	1	<R>
35(1)		GL-9NG4	LED	1	<R>
37(1)		VMZ1539	PS INSULATER	1	
38(1)		VMZ1543	TUBE	2	
39(1)		VMX1769	STUD SPACER (A)	4	
41(1)		VSC3050	HEAT SINK	1	
42(1)		VMX1769	SCREW	2	
43(1)		VMZ1541	FUSE INSULATER	1	
44(1)		VMZ1542	PS COVER INSULATER	1	
45(1)		VMP2580	COVER	1	
47(1)		VEC0606	CONNECTOR (34P)	2	
48(1)		VEC0605	CONNECTOR (20P)	2	
50(2)		VJA0173	AC CORD	1	<!><R> AG-TB700-E
50(2)		VJA0258	AC CORD	1	<!><R> AG-TB700-A
53(2)		VQT3370	OPERATING INSTRUCTION	1	<!><R>
55(2)		VPG4897	ACCESSORIES PACKING CASE	1	
57(2)		VPN2512	CUSHION (LEFT)	1	
58(2)		VPN2513	CUSHION (RIGHT)	1	
59(2)		VPG4898	PACKING CASE	1	

2. ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
E1		VEP63044A	DIGITAL C.B.A.	1	(NLA)<R>
E2		VEP60197A	LED C.B.A.	1	(NLA)<R>
E3		VEP63043A	PROCESS C.B.A.	1	(NLA)<R>
E4		VEP61071A	POWER SUPPLY C.B.A.	1	(NLA)<R>
E5		VEQ1037	POWER UNIT	1	(NLA)<R><!>
E6		VEP60198A	S-TARMINAL	2	(NLA)<R>
	■	VEP63044A	DIGITAL C.B.A.		
			CAPACITORS		
C1		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C3		ECSF1VS105	T.CAPACITOR 35V 1U	1	
C4		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C6		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C7		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C8		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C9		ECKF1H220KB	C.CAPACITOR 50V 22P	1	
C10		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C11		ECKF1H105KB	C.CAPACITOR 50V 1U	1	
C13		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C14		ECKF1H390KB	C.CAPACITOR 50V 39P	1	
C15		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C16		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C17		ECQM1H222KF	P.CAPACITOR 50V 2200P	1	
C19		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C20,21		ECQM1H103KF	P.CAPACITOR 50V 0.01U	2	
C22		ECEA1HUR47	E.CAPACITOR 50V 0.47U	1	
C25,26		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C27		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C28		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C29-32		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C33		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C34,35		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C36		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C37		ECQP1J332JZ	P.CAPACITOR 63V 3300P	1	
C38,39		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C40		ECEA1HUR47	E.CAPACITOR 50V 0.47U	1	
C41-44		ECKF1H220KB	C.CAPACITOR 50V 22P	4	
C45,46		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C52-54		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C55		ECSF1VS225	T.CAPACITOR 35V 2.2U	1	
C56		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C57		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C58		ECKF1H131KB	C.CAPACITOR 50V 130P	1	
C59		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C60-63		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C64		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C65		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C67		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C68,69		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C70		ECQM1H222KF	P.CAPACITOR 50V 2200P	1	
C71		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C73		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C74		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C75		ECQM1H222KF	P.CAPACITOR 50V 2200P	1	
C76		ECQM1H333KF	P.CAPACITOR 50V 0.033U	1	
C77		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C78,79		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C80		ECKF1H391KB	C.CAPACITOR 50V 390P	1	
C81		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C82		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C83		ECQM1H222KF	P.CAPACITOR 50V 2200P	1	
C84		ECQM1H333KF	P.CAPACITOR 50V 0.033U	1	
C85,86		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C87		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C88-99		ECKF1H104KB	C.CAPACITOR 50V 0.1U	12	
C100-02		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C104-09		ECKF1H104KB	C.CAPACITOR 50V 0.1U	6	
C110		ECKF1H391KB	C.CAPACITOR 50V 390P	1	
C111		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C112-15		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C117-36		ECKF1H104KB	C.CAPACITOR 50V 0.1U	20	
C138		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C139-41		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C142		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C143-47		ECKF1H104KB	C.CAPACITOR 50V 0.1U	5	
C148		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C149,50		ECSF1VS475	T.CAPACITOR 35V 4.7U	2	
C151-57		ECKF1H104KB	C.CAPACITOR 50V 0.1U	7	
C158		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C159,60		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C161		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C162		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C164-66		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C167		ECSF1VS104	T.CAPACITOR 35V 0.1U	1	
C168,69		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C172		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C173		ECKF1H221KB	C.CAPACITOR 50V 220P	1	
C176		ECKF1H471KB	C.CAPACITOR 50V 470P	1	
C177		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C178,79		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C180		ECKF1H271KB	C.CAPACITOR 50V 270P	1	
C181,82		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C184		ECKF1H100KB	C.CAPACITOR 50V 10P	1	
C185,86		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C187		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C188		ECQM1H472KF	P.CAPACITOR 50V 4700P	1	
C189		ECSF1VS104	T.CAPACITOR 35V 0.1U	1	
C190,91		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C192		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C194		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C195		ECKF1H200KB	C.CAPACITOR 50V 20P	1	
C196,97		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C199		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C200		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C202		ECKF1H131KB	C.CAPACITOR 50V 130P	1	
C204		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C206		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C207		ECKF1H180KB	C.CAPACITOR 50V 18P	1	
C208		ECKF1H820KB	C.CAPACITOR 50V 82P	1	
C209-11		ECQM1H103KF	P.CAPACITOR 50V 0.01U	3	
C212		ECKF1H131KB	C.CAPACITOR 50V 130P	1	
C213-15		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C216		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C217		ECKF1H330KB	C.CAPACITOR 50V 33P	1	
C218		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C219		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C221		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C222		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C224		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C225		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C227		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C228		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C229		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C230		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C232		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C238		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
D1		MV2112	DIODE	1	<R>
D2		1S1588	DIODE	1	<R>
D3		MV2114	DIODE	1	<R>
D6		1S1588	DIODE	1	<R>
D7-9		1N34A	DIODE	3	<R>
D10		1N34A	DIODE	1	<R>
D11		1S1588	DIODE	1	<R>
D12		1N34A	DIODE	1	<R>
D13		05Z6.2Y	DIODE	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D13		05Z6.2Y	DIODE	1	<R>
D14,15		1S1588	DIODE	2	<R>
D16		05Z6.2Y	DIODE	1	<R>
D17		1S1588	DIODE	1	<R>
L1-3		VLF0815	FILTER	3	
L4		VLQ0341	COIL	1	
L5		VLQ0342K101	COIL 100UH	1	
L6		VLQ0429	COIL	1	
L7		VLQ0427	COIL	1	
L8		VLQ0342K390	COIL 39UH	1	
L9		VLQ0342K680	COIL 68UH	1	
Q1		2SC1815GR	TRANSISTOR	1	<R>
Q2		2SA1015GR	TRANSISTOR	1	<R>
Q3		2SK192BLA	TRANSISTOR	1	<R>
Q4,5		2SC1815GR	TRANSISTOR	2	<R>
Q6-8		2SA1015GR	TRANSISTOR	3	<R>
Q9		2SC1815GR	TRANSISTOR	1	<R>
Q10		2SA1015GR	TRANSISTOR	1	<R>
Q11-13		2SC1815GR	TRANSISTOR	3	<R>
Q14,15		2SA1015GR	TRANSISTOR	2	<R>
Q16		2SC1815GR	TRANSISTOR	1	<R>
Q17		2SA1015GR	TRANSISTOR	1	<R>
Q18		2SC1815GR	TRANSISTOR	1	<R>
Q19		2SK192BLA	TRANSISTOR	1	<R>
			RESISTORS		
R1-4		ERD25TJ103	C.RESISTOR 1/4W 10K	4	
R5		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R6		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R7		ERD25TJ221	C.RESISTOR 1/4W 220	1	
R8		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R9		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R10		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R11,12		ERD25TJ103	C.RESISTOR 1/4W 10K	2	
R13		ERD25TJ563	C.RESISTOR 1/4W 56K	1	
R14,15		ERD25TJ104	C.RESISTOR 1/4W 100K	2	
R16		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R17		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R18		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R19		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R20		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R21		ERD25TJ752	C.RESISTOR 1/4W 7.5K	1	
R22		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R23		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R24		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R25		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R26		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R27		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R28		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R29		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R30		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R31		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R32		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R33		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R34		ERD25TJ362	C.RESISTOR 1/4W 3.6K	1	
R35		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R36,37		ERD25TJ102	C.RESISTOR 1/4W 1K	2	
R38		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R39		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R40		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R41		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R42		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R43		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R44		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R45		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R46		ERD25TJ621	C.RESISTOR 1/4W 620	1	
R47,48		ERD25TJ363	C.RESISTOR 1/4W 36K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R49		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R50		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R51,52		ERD25TJ222	C.RESISTOR 1/4W 2.2K	2	
R53		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R54		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R55-57		ERD25TJ222	C.RESISTOR 1/4W 2.2K	3	
R61		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R62		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R63		ERD25TJ473	C.RESISTOR 1/4W 47K	1	
R64		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R65		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R66		ERD25TJ132	C.RESISTOR 1/4W 1.3K	1	
R67		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R68		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R69		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R70,71		ERD25TJ152	C.RESISTOR 1/4W 1.5K	2	
R72		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R74		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R75		ERD25TJ563	C.RESISTOR 1/4W 56K	1	
R76		ERD25TJ333	C.RESISTOR 1/4W 33K	1	
R77		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R78		ERD25TJ912	C.RESISTOR 1/4W 9.1K	1	
R79		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R80		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R81		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R82		ERD25TJ473	C.RESISTOR 1/4W 47K	1	
R83		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R84		ERD25TJ333	C.RESISTOR 1/4W 33K	1	
R85-87		ERD25TJ103	C.RESISTOR 1/4W 10K	3	
R88		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R89		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R90,91		ERD25TJ331	C.RESISTOR 1/4W 330	2	
R92,93		ERD25TJ561	C.RESISTOR 1/4W 560	2	
R94		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R95		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R96		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R97		ERD25TJ100	C.RESISTOR 1/4W 10	1	
R98		ERD25TJ822	C.RESISTOR 1/4W 8.2K	1	
R99		ERD25TJ204	C.RESISTOR 1/4W 200K	1	
R100		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R101		ERD25TJ303	C.RESISTOR 1/4W 30K	1	
R102		ERD25TJ683	C.RESISTOR 1/4W 68K	1	
R103		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R104,05		ERD25TJ331	C.RESISTOR 1/4W 330	2	
R106		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R107		ERD25TJ220	C.RESISTOR 1/4W 22	1	
R108		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R109		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R110		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R111		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R112		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R113		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R114		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R115		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R116		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R117		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R118		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R119		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R120		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R121		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R123		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R124		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R125		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R126		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R127		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R128		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R129		ERD25TJ4R7	C.RESISTOR 1/4W 4.7K	1	
R131		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R132,33		ERD25TJ392	C.RESISTOR 1/4W 3.9K	2	
R134		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R136		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R137		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R138,39		ERD25TJ223	C.RESISTOR 1/4W 22K	2	
R140		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R141		ERD25TJ102	C.RESISTOR 1/4W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R143		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R144		ERD25TJ100	C.RESISTOR 1/4W 10	1	
R145		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R146		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R147		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R148		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R149		ERD25TJ220	C.RESISTOR 1/4W 22	1	
R150		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R151		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R152-54		ERD25TJ102	C.RESISTOR 1/4W 1K	3	
R155		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R156		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R157		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R158		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R159		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R160		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R161		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R162		ERD25TJ393	C.RESISTOR 1/4W 39K	1	
R163		ERD25TJ100	C.RESISTOR 1/4W 10	1	
R164		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R165		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R166		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R167		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R168		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R169		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R170		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R171		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R172		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R173		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R174		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R175		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R176		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R177		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R178		ERD25TJ363	C.RESISTOR 1/4W 36K	1	
R179		ERD25TJ913	C.RESISTOR 1/4W 91K	1	
R182		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R183		ERD25TJ911	C.RESISTOR 1/4W 910	1	
R184		ERD25TJ680	C.RESISTOR 1/4W 68	1	
T1		VLT0575	TRANSFORMER	1	
X1		VSX0370	CRYSTAL OSCILLATOR	1	<R>
X2		VSX0369	CRYSTAL OSCILLATOR	1	<R>
X4		VSX0372	CRYSTAL OSCILLATOR	1	<R>
CN201		VJP2541B034	CONNECTOR (MALE)	1	
CN202		VJP2541B020	CONNECTOR (MALE)	1	
CN203		VJP2541B034	CONNECTOR (MALE)	1	
CN204		VJP2541B020	CONNECTOR (MALE)	1	
CN205		VJP2824B006	CONNECTOR (MALE)	1	
CN206		VJP2879B006	CONNECTOR (MALE)	1	
CN207		VJP2879B003	CONNECTOR (MALE)	1	
CN208		VJP2879B006	CONNECTOR (MALE)	1	
CN209		VJP2879B004	CONNECTOR (MALE)	1	
IC1A		UPC1458C	IC	1	<R>
IC2B		CX7930A	IC	1	<R>
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IC2E		74F04	IC	1	<R>
IC3C		TC74HC244AP	IC	1	<R>
IC3J,3K		CXK1206M	IC	2	<R>
IC4E,4F		M5L74LS163	IC	2	<R>
IC4H		M5L74LS163	IC	1	<R>
IC4M		LM311N	IC	1	<R>
IC5C		M5L74LS04	IC	1	<R>
IC5F		VSI0585	IC	1	<R>
IC5H		VSI0594	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC5J,5K		CXK1206M	IC	2	<R>
IC6B		MC4044P	IC	1	<R>
IC6C		SN74LS125A	IC	1	<R>
IC6E		VSI0586	IC	1	<R>
IC6F		M5L74LS163	IC	1	<R>
IC6H		VSI0593	IC	1	<R>
IC7C		M5L74LS123	IC	1	<R>
IC7D		M5L74LS221	IC	1	<R>
IC7E		VSI0590	IC	1	<R>
IC7F		VSI0596	IC	1	<R>
IC7H		VSI0597	IC	1	<R>
IC7M		UPC4082C	IC	1	<R>
IC7N		LF353N	IC	1	<R>
IC8B		SN74221	IC	1	<R>
IC8D		M5L74LS14P	IC	1	<R>
IC8E		M5L74LS163	IC	1	<R>
IC8F		VSI0595	IC	1	<R>
IC8H		VSI0592	IC	1	<R>
IC8J,8K		CXK1206M	IC	2	<R>
IC8M		CD4053B	IC	1	<R>
IC9B		LF353N	IC	1	<R>
IC9C		CX7930A	IC	1	<R>
IC9E		VSI0585	IC	1	<R>
IC9F		47F244	IC	1	<R>
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IC10B		LF353N	IC	1	<R>
IC10C,OD		TC74HC221P	IC	2	<R>
IC10E		TC74HC374AP	IC	1	<R>
IC10H		VSI0584	IC	1	<R>
IC10J,OK		CXK1206M	IC	2	<R>
IC10N		MC1414P	IC	1	<R>
IC11B		SN74221	IC	1	<R>
IC11C		M5L74LS00	IC	1	<R>
IC11D		M5L74LS04	IC	1	<R>
IC11E		VSI0583	IC	1	<R>
IC11F		TC74HC14AP	IC	1	<R>
IC11H		CXK1202S	IC	1	<R>
IC12B		SN74221	IC	1	<R>
IC12C		74F74	IC	1	<R>
IC13B		SN74LS07	IC	1	<R>
IC13C		VSI0599	IC	1	<R>
IC13D		TC74HC00AP	IC	1	<R>
IC13E		VSI0582	IC	1	<R>
IC13H		74F283	IC	1	<R>
IC13J		TC74HC374AP	IC	1	<R>
IC13M		AN612	IC	1	<R>
IC14B		TC74HC374AP			
IC14C		VSI0598	IC	1	<R>
IC14D		M5L74LS123	IC	1	<R>
IC14E		M5L74LS374	IC	1	<R>
IC14F		VSI0600	IC	1	<R>
IC14H		74F283	IC	1	<R>
IC14J		TC74HC374AP	IC	1	<R>
IC15D		M5L74LS14P	IC	1	<R>
IC15E		M5L74LS163	IC	1	<R>
IC15F		74AC374	IC	1	<R>
IC15J		TC74HC283AP	IC	1	<R>
IC15L		LF353N	IC	1	<R>
IC15N		MC1414P	IC	1	<R>
IC16E		VSI0587	IC	1	<R>
IC16F		SM5828	IC	1	<R>
IC16H		M5L74LS86	IC	1	<R>
IC16J		TC74HC283AP	IC	1	<R>
IC17B		M5L74LS163	IC	1	<R>
IC17C		TC74HC374AP	IC	1	<R>
IC17D		CXK1202S	IC	1	<R>
IC17E		VSI0588	IC	1	<R>
IC17J		TC74HC374AP	IC	1	<R>
IC18B		NE555	IC	1	<R>
IC18C		TC74HC374AP	IC	1	<R>
IC18D		CXK1202S	IC	1	<R>
IC18E		VSI0589	IC	1	<R>
IC18F		TC74HC244AP	IC	1	<R>
IC18J		TC74HC374AP	IC	1	<R>
IC18H		CXK1202S	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC19L		AN612	IC	1	<R>
JP2		VJP2532	CONNECTOR (MALE)	1	
JP4		VJP2532	CONNECTOR (MALE)	1	
JP6		VJP1990	CONNECTOR (MALE)	1	
LED1-4		GL3PG1	LED	4	
LED2M		TLP570	PHOTO DIODE	1	
LED3M		TLP570	PHOTO DIODE	1	
RA1,A2		VCRB05A103J	IC 10K	2	
RA4		VCRB09A103J	IC 10K	1	
REG1,2		TP78L005AP	IC	2	
SW1		VST0111	SWITCH	1	<R>
SW2		VST0145	SWITCH	1	<R>
SW3		VSR0060	SWITCH	1	<R>
SW4-7		VSP0400	SWITCH	4	<R>
SW9		VST0146	SWITCH	1	<R>
TP1		VJR0400B	TEST PIN	1	
TP2		VJR04000	TEST PIN	1	
TP3-5		VJR0400B	TEST PIN	3	
TP6-9		VJR04000	TEST PIN	4	
TP10-18		VJR04000	TEST PIN	9	
TP19		VJR0400B	TEST PIN	1	
TP20-25		VJR04000	TEST PIN	6	
VC1		ECV1ZW10X53T	TRIMMER 10P	1	
VC2,C3		ECV1ZW20X53T	TRIMMER 20P	2	
VR1		VRV0101B502	V.RESISTOR 5K	1	
VR2-4		VRV0127	V.RESISTOR	3	
VR5		VRV0065B103	V.RESISTOR 10K	1	
VR6		VRV0101B502	V.RESISTOR 5K	1	
VR7-9		VRV0065B502	V.RESISTOR 5K	3	
VR10		VRV0065B502	V.RESISTOR 5K	1	
VR11		VRV0065B503	V.RESISTOR 50K	1	
VR12		VRV0065B502	V.RESISTOR 5K	1	
VR14		VRV0065B103	V.RESISTOR 10K	1	
	■	VEP60197A	LED C.B.A.		
			MISCELLANEOUS		
E7		GL4PG2	LED	2	
	■	VEP63043A	PROCESS C.B.A.		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C1-4		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C5		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C6		ECKF1H300KB	C.CAPACITOR 50V 30P	1	
C7,8		ECEA1CU470	E.CAPACITOR 16V 47U	2	
C9		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C10		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C11		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C12		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C13		ECKF1H121KB	C.CAPACITOR 50V 120P	1	
C14		ECKF1H300KB	C.CAPACITOR 50V 30P	1	
C15		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C16		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C17		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C18		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C19		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C20		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C21		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C22		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C23		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C24,25		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C26		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C27		ECCF1H121J	C.CAPACITOR 50V 120P	1	
C28		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C29		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C30		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C31		ECKF1H471KB	C.CAPACITOR 50V 470P	1	
C32		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C33		ECKF1H181KB	C.CAPACITOR 50V 180P	1	
C34		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C35		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C36		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C38		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C39		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C40		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C41		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C42		A15	P.CAPACITOR 50V 0.022U	1	
C43-45		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C46		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C47		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C48		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C49		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C50		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C51		ECKF1H470KB	C.CAPACITOR 50V 47P	1	
C52		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C53		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C54		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C55,56		ECEA1CU101	E.CAPACITOR 16V 100U	2	
C57		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C58		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C59		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C61		ECKF1H181KB	C.CAPACITOR 50V 180P	1	
C63		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C64		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C65		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C66-68		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C69		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C70,71		ECEA1CU101	E.CAPACITOR 16V 100U	2	
C72		ECKF1H100KB	C.CAPACITOR 50V 10P	1	
C73		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C74,75		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C76		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C77		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C78,79		ECEA1CU470	E.CAPACITOR 16V 47U	2	
C80		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C81,82		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C83		ECCF1H181J	C.CAPACITOR 50V 180P	1	
C84		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C85		ECKF1H221KB	C.CAPACITOR 50V 220P	1	
C86		ECKF1H390KB	C.CAPACITOR 50V 39P	1	
C87		ECKF1H081KB	C.CAPACITOR 50V 80P	1	
C88		ECCF1H121J	C.CAPACITOR 50V 120P	1	
C89		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C90,91		ECQM1H102KF	P.CAPACITOR 50V 1000P	2	
C93		ECKF1H680KB	C.CAPACITOR 50V 68P	1	
C94		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C95,96		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C97		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C98		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C99		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C110,11		ECQM1H103KF	P.CAPACITOR 50V 0.01U	2	
C112		ECKF1H080KB	C.CAPACITOR 50V 8P	1	
C114,15		ECQM1H102KF	P.CAPACITOR 50V 1000P	2	
C116		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C117		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C118		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C119		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C120		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C121		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C122,23		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C124,25		ECKF1H511KB	C.CAPACITOR 50V 510P	2	
C126		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C127		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C128		ECKF1H200KB	C.CAPACITOR 50V 20P	1	
C129		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C130		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C131		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C132-34		BECKF1H104K	C.CAPACITOR 50V 0.1U	3	
C135		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C136-38		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C141,42		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C143		ECKF1H271KB	C.CAPACITOR 50V 270P	1	
C144-46		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C147		ECSF1VS474	T.CAPACITOR 35V 0.47U	1	
C148		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C149		ECQM1H473KF	P.CAPACITOR 50V 0.047U	1	
C150		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C151		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C152		ECKF1H301KB	C.CAPACITOR 50V 300P	1	
C153		ECKF1H081KB	C.CAPACITOR 50V 80P	1	
C154		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C155		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C156		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C157		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C158		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C159		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C160		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C161		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C162,63		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C164,65		ECKF1H511KB	C.CAPACITOR 50V 510P	2	
C166		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C167		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C168		ECKF1H200KB	C.CAPACITOR 50V 20P	1	
C169		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C170		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C171		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C172-76		ECKF1H104KB	C.CAPACITOR 50V 0.1U	5	
C177		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C178		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C179		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C180		ECCF1H181J	C.CAPACITOR 50V 180P	1	
C181		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C182		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C183		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C184,85		ECQM1H103KF	P.CAPACITOR 50V 0.01U	2	
C186		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C187		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C188,89		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C190		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C191		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C192		ECKF1H331KB	C.CAPACITOR 50V 330P	1	
C193		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C194		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C195		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C196		ECQM1H153KF	P.CAPACITOR 50V 0.015U	1	
C197		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C198,99		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C210		ECKF1H121KB	C.CAPACITOR 50V 120P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C211		ECSF1VS474	T.CAPACITOR 35V 0.47U	1	
C212		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C213		ECCF1H680JU	P.CAPACITOR 50V 68P	1	
C214		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C215		ECCF1H181J	C.CAPACITOR 50V 180P	1	
C216		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C217,18		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C219-21		ECQM1H102KF	P.CAPACITOR 50V 1000P	3	
C222		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C224		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C225		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C226		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C227		ECSF1VS475	T.CAPACITOR 35V 4.7U	1	
C228		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C229		ECKF1H080KB	C.CAPACITOR 50V 8P	1	
C230		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C231		ECSF1VS475	T.CAPACITOR 35V 4.7U	1	
C232		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C233		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C234,35		ECQM1H103KF	P.CAPACITOR 50V 0.01U	2	
C236		ECCF1H121J	P.CAPACITOR 50V 120P	1	
C237		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C238		ECCF1H121J	P.CAPACITOR 50V 120P	1	
C239		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C240		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C241		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C242		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C243		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C244		ECKF1H560KB	C.CAPACITOR 50V 56P	1	
C245		ECKF1H121KB	C.CAPACITOR 50V 120P	1	
C246,47		ECEA1HU4R7	E.CAPACITOR 50V 4.7U	2	
C249		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C250		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C251		ECSF1VS474	T.CAPACITOR 35V 0.47U	1	
C252		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C253		ECSF1VS105	T.CAPACITOR 35V 1U	1	
C254		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C255		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C256		ECCF1H181J	C.CAPACITOR 50V 180U	1	
C257		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C258		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C259		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C260-62		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C263		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C264,65		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C266		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C267,68		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C269		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C270		ECQM1H682KF	P.CAPACITOR 50V 6800P	1	
C271,72		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C273		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C274		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C275		ECKF1H221KB	C.CAPACITOR 50V 220P	1	
C276		ECQM1H473KF	P.CAPACITOR 50V 0.047U	1	
C277		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C278		ECQM1H333KF	P.CAPACITOR 50V 0.033U	1	
C279-82		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C283		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C284		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C285		ECEA1EU4R7	E.CAPACITOR 25V 4.7U	1	
C286		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C287		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C288		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C289		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C290		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C291		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C292-94		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C295		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C296		ECKF1H070KB	C.CAPACITOR 50V 7P	1	
C297		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C298		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C299		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C310		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C311		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C312		ECKF1H221KB	C.CAPACITOR 50V 220P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C313		ECQM1H223KF	P.CAPACITOR 50V 0.022U	1	
C314		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C315,16		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C317		ECKF1H101KB	C.CAPACITOR 50V 100P	1	
C318		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C319		ECKF1H471KB	C.CAPACITOR 50V 470P	1	
C320		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C321		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C322,23		ECKF1H220KB	C.CAPACITOR 50V 22P	2	
C324		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C326,27		ECQM1H103KF	P.CAPACITOR 50V 0.01U	2	
C328		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C329		ECQM1H473KF	P.CAPACITOR 50V 0.047U	1	
C330		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C331		ECKF1H680KB	C.CAPACITOR 50V 68P	1	
C332		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C333		ECKF1H121KB	C.CAPACITOR 50V 120P	1	
C334,35		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C336		ECKF1H220KB	C.CAPACITOR 50V 22P	1	
C337		ECKF1H680KB	C.CAPACITOR 50V 68P	1	
C338		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C339-42		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C343		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C344		ECKF1H221KB	C.CAPACITOR 50V 220P	1	
C347,48		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C349		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C350		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C351		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C352		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C353		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C354		ECKF1H181KB	C.CAPACITOR 50V 180P	1	
C355		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C356-58		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C359		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C360		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C361		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C362		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C363		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C364-66		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C367		ECQM1H103KF	P.CAPACITOR 50V 0.01U	1	
C368		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C369		ECKF1H050KB	C.CAPACITOR 50V 5P	1	
C370		ECKF1H270KB	C.CAPACITOR 50V 27P	1	
C371		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C372		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C373		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C374		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C375		ECKF1H910KB	C.CAPACITOR 50V 91P	1	
C377		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C378		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C379		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C380		ECKF1H100KB	C.CAPACITOR 50V 10P	1	
C381		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
C382		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C383,84		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C385		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C386		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C388		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C389,90		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C391		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C392-95		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C396		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C397		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C398,99		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C410		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C411		ECKF1H090KB	C.CAPACITOR 50V 9P	1	
C412		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C413		ECKF1H561KB	C.CAPACITOR 50V 560P	1	
C414,15		ECKF1H151KB	C.CAPACITOR 50V 150P	2	
C416		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C417		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C418-20		ECKF1H104KB	C.CAPACITOR 50V 0.1U	3	
C421		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C422,23		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C424		ECEA1CU101	E.CAPACITOR 16V 100U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C425		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C426		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C427		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C428		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C429		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C430		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C431		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C432		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C433		ECEA1CU221	E.CAPACITOR 16V 220U	1	
C434		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C435,36		ECKF1H150KB	C.CAPACITOR 50V 15P	2	
C437,38		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C439		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C440,41		ECEA1CU101	E.CAPACITOR 16V 100U	2	
C442		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C443		ECQM1H102KF	P.CAPACITOR 50V 1000P	1	
C444		ECKF1H080KB	C.CAPACITOR 50V 8P	1	
C445		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C446		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C447		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C448		ECKF1H151KB	C.CAPACITOR 50V 150P	1	
C449		ECKF1H561KB	C.CAPACITOR 50V 560P	1	
C450		ECKF1H151KB	C.CAPACITOR 50V 150P	1	
C451		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C452,53		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C454,55		ECEA1CU101	E.CAPACITOR 16V 100U	2	
C456-59		ECKF1H104KB	C.CAPACITOR 50V 0.1U	4	
C460		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C461		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C462,63		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C464		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C465		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C466		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C467		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C468		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C470		ECSF1VS105	T.CAPACITOR 35V 1U	1	
C471		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
C474		ECKF1H104KB	C.CAPACITOR 50V 0.1U	1	
C475		ECKF1H300KB	C.CAPACITOR 50V 30P	1	
C476,77		ECKF1H104KB	C.CAPACITOR 50V 0.1U	2	
C480		ECKF1H131KB	C.CAPACITOR 50V 130P	1	
C481		ECKF1H270KB	C.CAPACITOR 50V 27P	1	
C482		ECKF1H390KB	C.CAPACITOR 50V 39P	1	
C483		ECKF1H201KB	C.CAPACITOR 50V 200P	1	
C484		ECQM1H473KF	P.CAPACITOR 50V 0.047U	1	
C489		ECKF1H150KB	C.CAPACITOR 50V 15P	1	
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D25,26		1S1588	DIODE	2	<R>
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L1		VLQ0342K101	COIL 100UH	1	
L2		VLQ0342K390	COIL 39UH	1	
L3		VLQ0342K101	COIL 100UH	1	
L4		VLQ0342K330	COIL 33UH	1	
L5		VLQ0342K101	COIL 100UH	1	
L6		VLQ0341K6R8	COIL 6.8UH	1	
L7		VLQ0342K120	COIL 12UH	1	
L8		VLQ0427	COIL MAX. 10UH	1	
L9		VLQ0342K221	COIL 220UH	1	
L11,12		VLQ0342K221	COIL 220UH	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L13		VLQ0342K471	COIL 470UH	1	
L14		VLQ0342K100	COIL 10UH	1	
L15		VLQ0342K101	COIL 100UH	1	
L16,17		VLQ0342K330	COIL 33UH	2	
L18		VLQ0342K221	COIL 220UH	1	
L19		VLQ0342K471	COIL 470UH	1	
L20		VLQ0341K4R7	COIL 4.7UH	1	
L21,22		VLQ0341K6R8	COIL 6.8UH	2	
L23		VLQ0342K101	COIL 100UH	1	
L24,25		VLQ0342K330	COIL 33UH	2	
L26		VLQ0342K221	COIL 220UH	1	
L27		VLQ0428	COIL MAX. 12UH	1	
L29		VLQ0428	COIL MAX. 12UH	1	
L30		VLQ0341K1R0	COIL 1.0UH	1	
L31		VLQ0342K101	COIL 100UH	1	
L32		VLQ0341K1R0	COIL 1.0UH	1	
L33		VLQ0342K221	COIL 220UH	1	
L34		VLQ0430	COIL MAX. 1.4UH	1	
L37,38		VLQ0342K101	COIL 100UH	2	
L39		VLQ0429	COIL MAX. 22UH	1	
L40		VLQ0342K221	COIL 220UH	1	
L41		VLQ0342K471	COIL 470UH	1	
L42		VLQ0342K120	COIL 12UH	1	
L43		VLQ0427	COIL MAX. 10UH	1	
L44		VLQ0342K560	COIL 56UH	1	
L45		VLQ0342K101	COIL 100UH	1	
L46		VLQ0428	COIL MAX. 12UH	1	
L48		VLQ0428	COIL MAX. 12UH	1	
L49		VLQ0342K101	COIL 100UH	1	
L50		VLQ0342K471	COIL 470UH	1	
L51		VLQ0342K560	COIL 56UH	1	
L52		VLQ0342K330	COIL 33UH	1	
L53		VLQ0342K220	COIL 22UH	1	
L54		VLQ0342K330	COIL 33UH	1	
L55		VLQ0342K471	COIL 470UH	1	
L56,57		VLQ0342K221	COIL 220UH	2	
L58		VLQ0342K101	COIL 100UH	1	
L59		VLQ0342K221	COIL 220UH	1	
L60		VLQ0342K101	COIL 100UH	1	
L61,62		VLQ0342K330	COIL 33UH	2	
L63,64		VLF0815	FILTER	2	
L65		VLQ0342K471	COIL 470UH	1	
L66		VLF0815	FILTER	1	
L67-69		VLQ0342K100	COIL 10UH	3	
L70		VLQ0428	COIL MAX. 12UH	1	
L71		VLQ0342K120	COIL 12UH	1	
L72		VLQ0342K471	COIL 470UH	1	
L73,74		VLQ0341K6R8	COIL 6.7UH	2	
L75,76		VLQ0428	COIL MAX. 12UH	2	
L80		VLQ0342K680	COIL 68UH	1	
Q1,2		2SC1815GR	TRANSISTOR	2	<R>
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Q83,84		2SA1015GR	TRANSISTOR	2	<R>
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Q87,88		2SC1815GR	TRANSISTOR	2	<R>
Q90		2SC1815GR	TRANSISTOR	1	<R>
			RESISTORS		
R1		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R2		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R3		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R4		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R5		ERD25TJ221	C.RESISTOR 1/4W 220	1	
R6		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R7		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R8		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R9		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R10		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R11		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R12,13		ERD25TJ103	C.RESISTOR 1/4W 10K	2	
R14		ERD25TJ563	C.RESISTOR 1/4W 56K	1	
R15		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R16		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R17		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R19		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R20		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R21		ERD25TJ162	C.RESISTOR 1/4W 1.6K	1	
R22		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R23		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R24		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R25		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R26		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R27		ERD25TJ391	C.RESISTOR 1/4W 390	1	
R28		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R29,30		ERD25TJ272	C.RESISTOR 1/4W 2.7K	2	
R31		ERD25TJ913	C.RESISTOR 1/4W 91K	1	
R32		ERD25TJ163	C.RESISTOR 1/4W 16K	1	
R33		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R34		ERD25TJ223	C.RESISTOR 1/4W 22K	1	
R35		ERD25TJ224	C.RESISTOR 1/4W 220K	1	
R36		ERD25TJ203	C.RESISTOR 1/4W 20K	1	
R37		ERD25TJ334	C.RESISTOR 1/4W 330K	1	
R38		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R39		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R40		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R41,42		ERD25TJ202	C.RESISTOR 1/4W 2K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R43		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R44		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R45		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R46		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R47		ERD25TJ301	C.RESISTOR 1/4W 300	1	
R48		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R49		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R50		ERD25TJ183	C.RESISTOR 1/4W 18K	1	
R51		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R52		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R53		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R54		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R55		ERD25TJ511	C.RESISTOR 1/4W 510	1	
R56		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R57,58		ERD25TJ152	C.RESISTOR 1/4W 1.5K	2	
R59		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R60		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R61		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R62		ERD25TJ273	C.RESISTOR 1/4W 27K	1	
R63		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R64		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R65		ERD25TJ151	C.RESISTOR 1/4W 150	1	
R66		ERO25CKG3480	C.RESISTOR 1/4W 0.348K	1	
R67		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R68		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R69		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R70		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R71		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R72		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R73		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R74		ERD25TJ621	C.RESISTOR 1/4W 620	1	
R75		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R76		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R77		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R78,79		ERD25TJ301	C.RESISTOR 1/4W 300	2	
R80		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R81		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R82		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R83		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R84		ERD25TJ124	C.RESISTOR 1/4W 120K	1	
R85		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R86		ERD25TJ362	C.RESISTOR 1/4W 3.6K	1	
R87		ERD25TJ123	C.RESISTOR 1/4W 12K	1	
R88		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R89		ERD25TJ124	C.RESISTOR 1/4W 120K	1	
R90		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R91		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R92		ERD25TJ221	C.RESISTOR 1/4W 220	1	
R93		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R94		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R95		ERD25TJ912	C.RESISTOR 1/4W 9.1K	1	
R96		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R97,98		ERO25CKG750	M.RESISTOR 1/8W 0.75K	2	
R99		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R110		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R111		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R112		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R113		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R114		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R115		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R116		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R117		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R118		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R119		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R120		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R121		ERD25TJ301	C.RESISTOR 1/4W 300	1	
R122		ERO25CKG750	M.RESISTOR 1/8W 0.75K	1	
R123		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R124		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R125		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R126		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R127,28		ERD25TJ751	C.RESISTOR 1/4W 750	2	
R129		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R130		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R131		ERD25TJ103	C.RESISTOR 1/4W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R132		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R133		ERD25TJ474	C.RESISTOR 1/4W 470K	1	
R134		ERD25TJ822	C.RESISTOR 1/4W 8.2K	1	
R135		ERD25TJ754	C.RESISTOR 1/4W 750K	1	
R136		ERD25TJ223	C.RESISTOR 1/4W 22K	1	
R137		ERD25TJ474	C.RESISTOR 1/4W 470K	1	
R138		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R139		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R140		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R141,42		ERD25TJ102	C.RESISTOR 1/4W 1K	2	
R143		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R144		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R145		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R146		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R147		ERD25TJ183	C.RESISTOR 1/4W 18K	1	
R148		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R149		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R150		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R151		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R152		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R153		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R154		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R155		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R156		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R157		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R158		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R159		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R160		ERD25TJ510	C.RESISTOR 1/4W 51	1	
R161		ERD25TJ123	C.RESISTOR 1/4W 12K	1	
R162		ERD25TJ224	C.RESISTOR 1/4W 220K	1	
R163		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R164		ERD25TJ822	C.RESISTOR 1/4W 8.2K	1	
R165		ERD25TJ823	C.RESISTOR 1/4W 82K	1	
R166		ERD25TJ223	C.RESISTOR 1/4W 22K	1	
R167		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R168		ERD25TJ121	C.RESISTOR 1/4W 120	1	
R169,70		ERD25TJ471	C.RESISTOR 1/4W 470	2	
R171		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R172		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R173		ERD25TJ183	C.RESISTOR 1/4W 18K	1	
R174		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R175		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R176		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R177		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R178		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R179		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R180		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R181		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R182		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R183		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R184		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R185		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R186		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R187		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R188		ERD25TJ301	C.RESISTOR 1/4W 300	1	
R189		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R190,91		ERD25TJ471	C.RESISTOR 1/4W 470	2	
R192		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R193		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R194		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R195		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R196		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R197		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R198		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R199		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R210		ERD25TJ304	C.RESISTOR 1/4W 300K	1	
R211		ERD25TJ474	C.RESISTOR 1/4W 470K	1	
R212		ERD25TJ203	C.RESISTOR 1/4W 20K	1	
R213		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R214		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R215		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R216,17		ERD25TJ562	C.RESISTOR 1/4W 5.6K	2	
R218		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R219		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R220		ERD25TJ103	C.RESISTOR 1/4W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R221		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R222		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R223		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R224		ERD25TJ822	C.RESISTOR 1/4W 8.2K	1	
R225		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R226		ERD25TJ361	C.RESISTOR 1/4W 360	1	
R227		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R228		ERD25TJ361	C.RESISTOR 1/4W 360	1	
R229		ERD25TJ432	C.RESISTOR 1/4W 4.3K	1	
R230,31		ERD25TJ102	C.RESISTOR 1/4W 1K	2	
R232		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R233		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R234		ERD25TJ124	C.RESISTOR 1/4W 120K	1	
R235		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R236		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R237,38		ERD25TJ104	C.RESISTOR 1/4W 100K	2	
R239		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R240,41		ERD25TJ103	C.RESISTOR 1/4W 10K	2	
R242		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R243		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R244		ERD25TJ224	C.RESISTOR 1/4W 220K	1	
R245		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R246		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R247		ERD25TJ301	C.RESISTOR 1/4W 300	1	
R248		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R249		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R250		ERD25TJ201	C.RESISTOR 1/4W 200	1	
R251		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R252		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R253		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R254,55		ERD25TJ122	C.RESISTOR 1/4W 1.2K	2	
R256		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R257		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R258		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R259		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R260		ERD25TJ183	C.RESISTOR 1/4W 18K	1	
R261		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R262		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R263		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R264		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R265		ERD25TJ432	C.RESISTOR 1/4W 4.3K	1	
R266		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R267		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R268		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R269		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R270		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R271		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R272		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R273		ERD25TJ362	C.RESISTOR 1/4W 3.6K	1	
R274		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R275		ERD25TJ754	C.RESISTOR 1/4W 750K	1	
R276		ERD25TJ124	C.RESISTOR 1/4W 120K	1	
R277		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R278		ERD25TJ820	C.RESISTOR 1/4W 82	1	
R279		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R280		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R281		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R282		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R283		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R284		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R285		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R286		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R287		ERD25TJ105	C.RESISTOR 1/4W 1000K	1	
R288		ERD25TJ331	C.RESISTOR 1/4W 330	1	
R289		ERD25TJ203	C.RESISTOR 1/4W 20K	1	
R290		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R291		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R292		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R293		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R294		ERD25TJ332	C.RESISTOR 1/4W 3.3K	1	
R295		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R296		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R297		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R298		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R299		ERD25TJ103	C.RESISTOR 1/4W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R310		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R311		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R312		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R313		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R314		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R315-17		ERD25TJ331	C.RESISTOR 1/4W 330	3	
R318		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R319		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R320		ERD25TJ563	C.RESISTOR 1/4W 56K	1	
R321		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R322		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R323		ERD25TJ182	C.RESISTOR 1/4W 1.8K	1	
R324		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R325		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R326		ERD25TJ123	C.RESISTOR 1/4W 12K	1	
R327		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R328		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R329		ERD25TJ303	C.RESISTOR 1/4W 30K	1	
R330		ERD25TJ362	C.RESISTOR 1/4W 3.6K	1	
R331		ERD25TJ393	C.RESISTOR 1/4W 39K	1	
R332,33		ERD25TJ103	C.RESISTOR 1/4W 10K	2	
R334,35		ERD25TJ182	C.RESISTOR 1/4W 1.8K	2	
R336		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R337		ERD25TJ563	C.RESISTOR 1/4W 56K	1	
R338		ERD25TJ303	C.RESISTOR 1/4W 30K	1	
R339		ERD25TJ181	C.RESISTOR 1/4W 180	1	
R340,41		ERD25TJ471	C.RESISTOR 1/4W 470	2	
R342		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R343		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R344		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R345,46		ERO25CKG3480	C.RESISTOR 1/4W 0.348K	2	
R347		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R348		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R349		ERO25CKG3480	C.RESISTOR 1/4W 0.348K	1	
R351		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R352		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R353		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R354		ERD25TJ621	C.RESISTOR 1/4W 620	1	
R355		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R356		ERD25TJ154	C.RESISTOR 1/4W 150K	1	
R357		ERD25TJ472	C.RESISTOR 1/4W 4.7K	1	
R358		ERD25TJ621	C.RESISTOR 1/4W 620	1	
R359		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R360		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R361		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R362		ERD25TJ271	C.RESISTOR 1/4W 270	1	
R363		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R364		ERD25TJ911	C.RESISTOR 1/4W 910	1	
R365		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R366		ERD25TJ330	C.RESISTOR 1/4W 33	1	
R367		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R368		ERD25TJ471	C.RESISTOR 1/4W 470	1	
R369		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R370		ERD25TJ821	C.RESISTOR 1/4W 820	1	
R371		ERD25TJ112	C.RESISTOR 1/4W 1.1K	1	
R372		ERD25TJ511	C.RESISTOR 1/4W 510	1	
R374		ERD25TJ271	C.RESISTOR 1/4W 270	1	
R375		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R376		ERD25TJ562	C.RESISTOR 1/4W 5.6K	1	
R377		ERD25TJ391	C.RESISTOR 1/4W 390	1	
R378		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R379		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R380		ERD25TJ222	C.RESISTOR 1/4W 2.2K	1	
R381		ERD25TJ272	C.RESISTOR 1/4W 2.7K	1	
R382		ERD25TJ392	C.RESISTOR 1/4W 3.9K	1	
R384		ERD25TJ822	C.RESISTOR 1/4W 8.2K	1	
R386		ERD25TJ163	C.RESISTOR 1/4W 16K	1	
R387		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R388,89		ERD25TJ105	C.RESISTOR 1/4W 1000K	2	
R390,91		ERO25CKG3480	C.RESISTOR 1/4W 0.348K	2	
R392		ERD25TJ223	C.RESISTOR 1/4W 22K	1	
R393		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R394		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R395		ERD25TJ223	C.RESISTOR 1/4W 22K	1	
R396		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R397,98		ERD25TJ681	C.RESISTOR 1/4W 680	2	
R399		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R410		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R411,12		ERD25TJ362	C.RESISTOR 1/4W 3.6K	2	
R413		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R414		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R415		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R416		ERO25CKG3320	C.RESISTOR 1/4W 0.332K	1	
R417		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R418		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R419		ERO25CKG3320	C.RESISTOR 1/4W 0.332K	1	
R420		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R421		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R422,23		ERO25CKG3320	C.RESISTOR 1/4W 0.332K	2	
R424		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R425,26		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	2	
R427		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R428		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R429		ERO25CKG3680	C.RESISTOR 1/4W 0.368K	1	
R430,31		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	2	
R432		ERO25CKG750	M.RESISTOR 1/8W 0.75K	1	
R433		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R434		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R435		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	1	
R436		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R437		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	1	
R438		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R439		ERO25CKG750	M.RESISTOR 1/8W 0.75K	1	
R440,41		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	2	
R442		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R443		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R444		ERD25TJ750	C.RESISTOR 1/4W 75	1	
R445		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R446		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	1	
R447		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R448		ERO25CKG4020	C.RESISTOR 1/4W 0.402K	1	
R449,50		ERD25TJ750	C.RESISTOR 1/4W 75	2	
R451		ERO25CKG2740	C.RESISTOR 1/8W 0.247K	1	
R452		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R453		ERD25TJ104	C.RESISTOR 1/4W 100K	1	
R454		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R455		ERD25TJ512	C.RESISTOR 1/4W 5.1K	1	
R456		ERD25TJ682	C.RESISTOR 1/4W 6.8K	1	
R457		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R458		ERD25TJ361	C.RESISTOR 1/4W 360	1	
R459		ERD25TJ681	C.RESISTOR 1/4W 680	1	
R460		ERD25TJ302	C.RESISTOR 1/4W 3K	1	
R461		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R462		ERD25TJ561	C.RESISTOR 1/4W 560	1	
R463		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R464		ERD25TJ362	C.RESISTOR 1/4W 3.6K	1	
R465		ERD25TJ751	C.RESISTOR 1/4W 750	1	
R466		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R467		ERD25TJ820	C.RESISTOR 1/4W 82	1	
R468		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R469		ERD25TJ150	C.RESISTOR 1/4W 15	1	
R473		ERD25TJ202	C.RESISTOR 1/4W 2K	1	
R474,75		ERD25TJ755	C.RESISTOR 1/4W 7500K	2	
R476,77		ERD25TJ102	C.RESISTOR 1/4W 1K	2	
R478		ERO25CKG3480	C.RESISTOR 1/4W 0.348K	1	
R479		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R480		ERD25TJ101	C.RESISTOR 1/4W 100	1	
R481		ERD25TJ680	C.RESISTOR 1/4W 68	1	
R482		ERD25TJ122	C.RESISTOR 1/4W 1.2K	1	
R483		ERD25TJ152	C.RESISTOR 1/4W 1.5K	1	
R484		ERD25TJ470	C.RESISTOR 1/4W 47	1	
R485		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
R491		ERD25TJ153	C.RESISTOR 1/4W 15K	1	
R492		ERD25TJ103	C.RESISTOR 1/4W 10K	1	
CN101		VJP2541B034	CONNECTOR (MALE)	1	
CN102		VJP2541B020	CONNECTOR (MALE)	1	
CN103		VJP2541B034	CONNECTOR (MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
CN104		VJP2541B020	CONNECTOR (MALE)	1	
CN105		VJP2824B006	CONNECTOR (MALE)	1	
CN106		VJP2879B003	CONNECTOR (MALE)	1	
CN107-10		VJP2879B004	CONNECTOR (MALE)	4	
CN111		VJP2879B006	CONNECTOR (MALE)	1	
DL1,2		VLD0168	DELAY	2	
IC1		NJM2235S	IC	1	<R>
IC2		LF353N	IC	1	<R>
IC3		UPC4082C	IC	1	<R>
IC4		LF353N	IC	1	<R>
IC5		CXD1175P	IC	1	<R>
IC6		TL610	IC	1	<R>
IC7		TX429M	IC	1	<R>
IC8		LF353N	IC	1	<R>
IC9		NJM2233AS	IC	1	<R>
IC10		NJM2233AS	IC	1	<R>
IC11		CX-894	IC	1	<R>
IC12		MC14053B	IC	1	<R>
IC13		UPC4082C	IC	1	<R>
IC14		M51271SP	IC	1	<R>
IC15		UPC4082C	IC	1	<R>
IC16		MC14053B	IC	1	<R>
IC17		CXD1175P	IC	1	<R>
IC18		MC1414P	IC	1	<R>
IC19		TA78L005AP	IC	1	<R>
IC20		CXD1175P	IC	1	<R>
IC21		AN612	IC	1	<R>
IC22		MC1414P	IC	1	<R>
IC23		LM393N	IC	1	<R>
IC24		CXL5003	IC	1	<R>
IC25,26		NJM2228S	IC	2	<R>
IC27		MC1648P	IC	1	<R>
IC28		CXL5003	IC	1	<R>
IC29		NJM2233AS	IC	1	<R>
IC30		LF353N	IC	1	<R>
IC31		TX429M	IC	1	<R>
IC32		TL607	IC	1	<R>
IC33		TA78L005AP	IC	1	<R>
IC34		UPC4082C	IC	1	<R>
IC35		TL607	IC	1	<R>
IC36		HA11247	IC	1	<R>
IC37		NJM2233AS	IC	1	<R>
IC38		LF353N	IC	1	<R>
IC39		M5L74LS04	IC	1	<R>
IC40		SN74LS125A	IC	1	<R>
IC41		M5L74LS123	IC	1	<R>
IC42		TC74HC221P	IC	1	<R>
IC43		M5L74LS74P	IC	1	<R>
IC44		M5L74LS14P	IC	1	<R>
IC45		SN74221	IC	1	<R>
IC46		TC74HC14AP	IC	1	<R>
IC47		M5L74LS123	IC	1	<R>
IC48		TC74HC00AP	IC	1	<R>
IC49-51		TC74HC221P	IC	3	<R>
IC52		SN74221	IC	1	<R>
IC53		74F04	IC	1	<R>
IC54		74F74	IC	1	<R>
IC55		SN74LS125A	IC	1	<R>
IC56		M5L74LS04	IC	1	<R>
IC57		M5L74LS123	IC	1	<R>
IC58		TC74HC02AP	IC	1	<R>
IC59		TC74HC00AP	IC	1	<R>
IC60		M5L74LS04	IC	1	<R>
IC61		TC74HC04AP	IC	1	<R>
IC62		CX-894	IC	1	<R>
IC63,64		AN612	IC	2	<R>
IC65		NJM2233AS	IC	1	<R>
IC66		MB40778	IC	1	<R>
IC67		LF353N	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC68		MC14053B	IC	1	<R>
IC69-71		LF353N	IC	3	<R>
IC72,73		NJM2233AS	IC	2	<R>
IC74		TA78L009AP	IC	1	<R>
IC75		LF353N	IC	1	<R>
IC76		MB40778	IC	1	<R>
JP2		VJP2532	CONNECTOR (MALE)	1	
JP5		VJP2532	CONNECTOR (MALE)	1	
JP6		VJP2532	CONNECTOR (MALE)	1	
JP7		VJP2532	CONNECTOR (MALE)	1	
JP12		VJP2532	CONNECTOR (MALE)	1	
RY1-6		VSY1048	RELAY	6	<R>
SW1-7		VST0144	SWITCH	7	<R>
SW8,9		VST0143	SWITCH	2	<R>
TP1,2		VJR0400	TEST PIN	2	
TP3		VJR0400B	TEST PIN	1	
TP4		VJR0400	TEST PIN	1	
TP5		VJR0400B	TEST PIN	1	
TP6		VJR0400	TEST PIN	1	
TP7		VJR0400B	TEST PIN	1	
TP8		VJR0400	TEST PIN	1	
TP9		VJR0400B	TEST PIN	1	
TP10		VJR0400	TEST PIN	1	
TP11		VJR0400B	TEST PIN	1	
TP12		VJR0400	TEST PIN	1	
TP13,14		VJR0400B	TEST PIN	2	
TP15,16		VJR0400	TEST PIN	2	
TP17,18		VJR0400B	TEST PIN	2	
TP19,20		VJR0400	TEST PIN	2	
TP21,22		VJR0400B	TEST PIN	2	
TP23		VJR0400	TEST PIN	1	
TP24		VJR0400B	TEST PIN	1	
TP25-27		VJR0400	TEST PIN	3	
TP28-30		VJR0400B	TEST PIN	3	
TP31,32		VJR0400	TEST PIN	2	
TP41-47		VJR0400	TEST PIN	7	
VCO		VSX0371	CRYSTAL OSCILLATOR	1	<R>
VC1,2		ECV1ZW30X53T	TRIMMER 30P	2	
VR1,2		VRV0065B102	V.RESISTOR 1K	2	
VR3,4		EVS70AS15B14	V.RESISTOR 10K	2	
VR5		VRV0065B502	V.RESISTOR 5K	1	
VR7		EVS70AS15B53	V.RESISTOR 5K	1	
VR8		EVS70AS15B14	V.RESISTOR 10K	1	
VR9		VRV0065B202	V.RESISTOR 2K	1	
VR11		VRV0065B502	V.RESISTOR 5K	1	
VR12		VRV0065B202	V.RESISTOR 2K	1	
VR13		VRV0065B102	V.RESISTOR 1K	1	
VR14		VRV0065B501	V.RESISTOR 500	1	
VR15		VRV0065B202	V.RESISTOR 2K	1	
VR16		VRV0065B301	V.RESISTOR 300	1	
VR17,18		VRV0065B501	V.RESISTOR 500	2	
VR19,20		VRV0065B102	V.RESISTOR 1K	2	
VR21		VRV0065B501	V.RESISTOR 500	1	
VR23-27		VRV0065B202	V.RESISTOR 2K	5	
VR28-31		VRV0065B501	V.RESISTOR 500	4	
VR32		VRV0065B203	V.RESISTOR 20K	1	
VR33		VRV0065B103	V.RESISTOR 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
VR34		VRV0065B202	V.RESISTOR 2K	1	
VR35		VRV0065B102	V.RESISTOR 1K	1	
VR36		VRV0065B502	V.RESISTOR 5K	1	
VR37		VRV0065B102	V.RESISTOR 1K	1	
VR38-41		VRV0065B203	V.RESISTOR 20K	4	
VR42,43		VRV0065B102	V.RESISTOR 1K	2	
VR44		VRV0065B501	V.RESISTOR 500	1	
VR46		VRV0065B501	V.RESISTOR 500	1	
VR48,49		VRV0065B103	V.RESISTOR 10K	2	
VR50		VRV0065B102	V.RESISTOR 1K	1	
VR51		VRV0065B202	V.RESISTOR 2K	1	
VR52,53		VRV0065B502	V.RESISTOR 5K	2	
VR54		VRV0065B204	V.RESISTOR 200K	1	
VR55,56		VRV0065B201	V.RESISTOR 200	2	
VR57		VRV0065B501	V.RESISTOR 500	1	
VR58		VRV0065B502	V.RESISTOR 5K	1	
VR59		VRV0065B204	V.RESISTOR 200K	1	
VR60		VRV0065B503	V.RESISTOR 50K	1	
VR61		VRV0065B102	V.RESISTOR 1K	1	
VR62,63		VRV0065B501	V.RESISTOR 500	2	
VR65		VRV0065B501	V.RESISTOR 500	1	
			MISCELLANEOUS		
E8		VGU4534	OPERATING VR KNOB	4	<R>
	■	VEP61071A	POWER SUPPLY C.B.A.		
			CAPACITORS		
C1		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C2		ECKF1H104K	C.CAPACITOR 50V 0.1U	1	
C3		ECEA1CU101	E.CAPACITOR 16V 100U	1	
C4		ECEA1CU471	E.CAPACITOR 16V 470U	1	
C5		ECKF1H104K	C.CAPACITOR 50V 0.1U	1	
C6		ECEA1CU471	E.CAPACITOR 16V 470U	1	
C7		ECKF1H104K	C.CAPACITOR 50V 0.1U	1	
CN301-03		VJS2674	CONNECTOR (FEMALE)	3	
CN304		VJP2824B002	CONNECTOR (MALE)	1	
			RESISTORS		
R1		ERD25TJ102	C.RESISTOR 1/4W 1K	1	
R2		ERG1SJ150	M.RESISTOR 1W 15	1	
R3		ERD25TJ331	C.RESISTOR 1/4W 330	1	
REG1		SI3122V	IC	1	<R>
RL1		VSY1049	RELAY	1	<R>
	■	VEQ1037	POWER UNIT		
			MISCELLANEOUS		
E9		XBA2C31TR0	FUSE	1	<!><R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP60198A	S-TERMINAL		
			MISCELLANEOUS		
E10		VJS2579	S-SOCKET	1	<R>